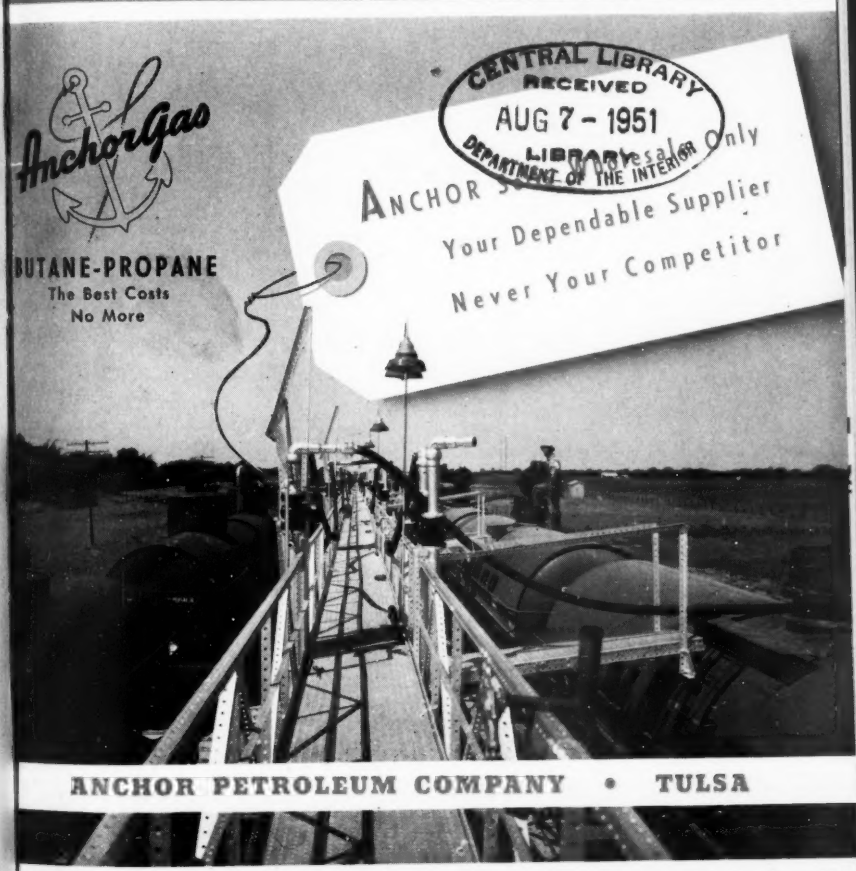
BUTANE-PROPANE

HEADQUARTERS F
INFORMATION SINCE



ANCHOR PETROLEUM COMPANY • TULSA

AUGUST 1951 — 50c per Copy

Plenty of REASONS

WHY HACKNEY CYLINDERS ARE PREFERRED

Here are three of many big Hackney LP-Gas Cylinders. They have all the features that make the Hackney RC-100A the most popular cylinder in the LP-Gas industry—cost-saving, light-weight, enduring strength, attractive appearance . . . plus a host of superior construction features. No wonder hundreds of thousands of Hackney Cylinders have gone into service, from these giants to small 1-lb. industrial models. For full details on Hackney LP-Gas Cylinders, write us.

1 *Model RH-300A—Removable Hood; 24" in dia. and 49" high (excluding collar). Can be charged with 300 lbs. Propane or 357 lbs. Butane.*

2 *Model PC-420A—Permanent Collar; 29" I.D. 48" high (excluding collar). Can be charged with 420 lbs. Propane or 500 lbs. Butane.*

3 *Model PC-200A — Permanent Collar. 22" I.D. x 39½" high (excluding collar). Can be charged with 200 lbs. Propane or 239 lbs. Butane.*

An Emblem We're Proud to Display

We're glad we've supported the National LP-Gas program right from the start. It has helped everybody in the industry . . . built sales for everyone. It's growing every day . . . and we urge you to join.

Hackney MILWAUKEE

PRESSED STEEL TANK COMPANY

Manufacturer of Hackney Products

1487 S. 66th St., Milwaukee 14
1399 Vanderbilt Concourse Bldg., New York 17
227 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St., N.W., Room 112, Atlanta 3
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NO. 00 METERS

are still available

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Place your orders *now* while you can be sure of getting Rockwell No. 00 meters. Don't delay until the increasing impact of defense orders makes delivery uncertain.

We suggest you wire, phone or write us your meter requirements today.

ROCKWELL MANUFACTURING COMPANY
PITTSBURGH 8, PA.

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ROCKWELL
NO. 00
LP-GAS METEI

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BUTANE-PROPANE News

AUGUST, 1951

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Letters

Gentlemen:

I am confronted with changing over nine brick and tile and hollow tile kilns that are beehive-type, 31 ft. in diameter, with 10 mouth pieces or opening for coal-firing to propane gas, which will require 11 gals. to equal 1000 Btu natural gas. They burn 150 tons each in seven days' burning.

What records have you on successfully using propane—laid down here at five to seven cents a gal. against $8 a ton for coal?

A.J.S.

Illinois

The application of both propane and natural gas to downdraft or brick and tile type kilns has been made in several instances; in all cases it has proved more economical than coal firing.

In general, little change has been made on the kiln itself except to remove the grates from the various firing ports and install gas burners. We know of one instance wherein butane at 9 cents displaced coal which was delivered at $12 to $13 per ton. The $12 to $13 per ton for coal did not include all the handling charges, etc., which in this case amounted to $5 or $6, whereas this high cost of coal and ash handling together with the poor quality of firing and loss of product and limitation of production enabled butane to show a better cost than did the coal. Secondly, the firing time on the kilns was reduced from 7 or 8 days to 4½ to 6 days which permitted a considerable increase in production.

Therefore, the $8 per ton which your client is paying for coal should have added to this figure all the delivery cost of coal to the kiln, as handling, extra cost for firing, higher maintenance on the bag walls of the kiln and all other incidental costs relative to the handling of the coal. This may amount to $3 or even as much as $6 per ton.—Ed.

•

Gentlemen:

What are the recommendations for converting a Continental 572 cubic inch engine to propane using Ensign equipment? What is the highest compression ratio that can be used with the present head and how much should be milled for best power and economy?

What is recommended for converting a 1951 F-4 Ford V-8 using Algas adapter combination, but expecting to use propane all the time?

W.H.H.

Ohio

Our information on the Continental 572-cu. in. engine is that the standard compression ratio is 5.9:1. The desirable ratio with propane would be form 7:1 to 7.5:1. Since this is an overhead valve type engine, securing that compression ratio would require an extreme cut on the head. We would recommend instead that you try to secure a set of high pistons and leave the head as it is.

For the Ford F-4 V-8 engine, we suggest milling 1/16 in. off the heads, and scooping out the dimples over the pistons to provide the necessary clearance.

You understand, of course, that it is desirable to block off as much heat as possible from the intake manifolds of all converted engines.—Ed.

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Gentlemen:

We have a 80-90 h.p. Scotch marine boiler now fired with coal, upon which we wish information as to the possibility of converting to LP-Gas, and whom we might contact on such a conversion.

Do you think such a conversion can be made as far as efficiency and possible cost of operation with propane gas at 16c per gallon.

E.B.T.

Florida

It is suggested that the manufacturer of the boiler be contacted for the conversion. The manufacturer can either supply a suitable gas burner

● **BUTANE-PROPANE** News **welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.**

and controls or recommend the kind best suited for the boiler. He can also recommend any changes in the baffles which may be required for greatest efficiency.

Include all the information on the boiler nameplate, including serial number, operating steam pressure, data on gas to be used, etc., when writing to the manufacturer.

We do not think propane at 16 cents per gal. will be competitive with coal in the north Florida area. Assume that the boiler is hand-fired which is the least efficient method of firing with coal. An efficiency of 55% may be considered reasonable although it is difficult to tell when the boiler is hand-fired. It is doubtful if the efficiency is any better. Secondly, assume that the efficiency could be raised to 75% with propane as the fuel, proper baffles and automatic steam pressure and draft control. Assume also that the coal has a heating value of about 13,000 Btu per ton. (It may be more or less and you can correct accordingly in the example which follows.) Propane has a heating value of about 91,500 Btu per gal.

The following example determines the price that could be paid per ton for coal to obtain the equivalent quantity of heat units if propane cost 16 cents per gal.:

$$\frac{2000 \text{ (lb. per ton coal)} \times 13{,}000 \text{ Btu per ton coal}}{91{,}500 \text{ Btu per gal. propane}} \times \frac{.55 \text{ (boiler efficiency with coal)}}{.75 \text{ (boiler efficiency with gas)}} \times$$

$.16 cost per gal. propane = $33.40 per ton of coal. The above cost of coal is the price per ton of coal burned and must include all handling costs, storage costs, ash handling, power, labor, etc., required when burning coal. Also, building space or land for coal storage, extra cleaning caused by coal handling, probable greater boiler repair costs, higher insurance rates, interest on fuel inventory, etc., must all be added to the cost of the coal.—Ed.

•

Gentlemen:

For 15 years we have been distributors of LP-Gas, supplying our customers needs primarily through the medium of underground tanks. The product now being sold is a mixture of 80% butane and 20% propane and is sold on a gallonage basis. For various types of customers, our price schedule ranges are 25c, 26c, 28c and 33c per gallon.

Our competitors sell straight propane on a pound basis. We would like very much to secure some authoritative information on a price comparison basis. It is requested that you give us, in as much detail as necessary, information showing relative prices of straight propane as compared to our price schedule noted above. We would like to know, for instance, the per pound price of propane that would compare with our rate schedule of 25c per gallon for our 80-20 mix.

W.D.M.

Florida

We refer you to Chapter 2, Part 2, of the Handbook Butane-Propane Gases for the solution to your problem.

From Fig. 1 the heating value of an 80% n-butane, 20% propane mixture is 99,700 Btu per gal. Similarly, from Fig 2, the weight of liquid per gallon is 4.738 lb., and from Fig. 3, the Btu lb. = 21,043.

Based on 25 cents per gal., the price per lb. of your fuel will be (25 ÷ 4.738) = 5.25 cents. Based on a heating value of 21,479 Btu per lb. for propane (above tables use this value), a pound of propane contains

$$\frac{(21{,}479 - 21{,}043 \times 100)}{21{,}043} = 2.06$$

per cent more heat units, but on the gallon basis, your mixture contains

$$\frac{99{,}700 - 91{,}000}{99{,}700} \times 100 = 7.02\%$$ more heat units.

ED.

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Gentlemen:

I have noticed several times in your magazine articles about companies in bulk business who rent tanks by the year.

Can you give us any information concerning these companies and how we might obtain the data on how they are run.

M.D.B.

Indiana

It would be necessary for you to determine the cost of your tanks and interest for a number of years, plus installation cost, then set up a schedule of rentals which would pay off in three, five or more years whatever you desire to do.

In our booklet No. 1, "Problems of Management," the business of costing on rentals and installations is outlined quite thoroughly and also in an article in the May, 1951, issue of BUTANE-PROPANE *News* it is dwelt upon again.—Ed.

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Gentlemen:

Our problem is how to raise the compression on an F-8 Ford truck. We have planed the head the maximum (0.245").

Can you advise of anyone making heads for this truck that would give about an 8.5 to 1 compression ratio.

Also, can you tell us of anyone

who has had experience with a Diamond T Model 704 with Hercules TDXB motor on propane.

D.W.S.

Iowa

We have no information on any head for the Ford F-8 truck which gives 8.5:1 compression. Our information on this engine is that the standard compression ratio is 6.4:1.

Ford Motor Co. advises that the Lincoln standard heads give 7:1 compression—and that milling .060 in. off the Lincoln heads gives 7.75:1. Frankly, we consider that this is about high enough, but if you have some special reason to go higher, then milling the Lincoln heads about .100 in. should do it. Most L-head combustion chambers become progressively more inefficient, however, after passing a compression ratio of about 7.5:1.

The Hercules TDXB engine compression ratio is generally 6.5:1. It can be raised to about 7.2:1 by planning ⅛ in. off the head.

If the intake manifold can be separated from the exhaust manifold so as to make it run cooler, this will give an additional gain on propane.—Ed.

•

Gentlemen:

What size orifice is required to deliver 3000 Btu's at 5 lb. pressure, at 10 lb. and 15 lb. Also would like the same information for 4000 Btu's and 5000 Btu's.

R.B.H.

Washington

The quantities which you list are so small we wonder if you mean Btu or thousands of Btu, or refer to some other unit of measurement.

Three thousand Btu is 1.2 cu. ft. of propane vapor, 4000 Btu is 1.6 cu. ft., and 5000 Btu is 2.0 cu. ft. (approximately). Referring to the table on p. 198 of the Handbook Butane-Propane Gases, you will notice the extremely small orifices required to pass the above quantities of propane at the low pressure of 11-in. water column.

A No. 80 drill size orifice (smallest drill size) will pass over 3000 Btu per hour at 2-lb. pressure, 4000 Btu at 3.0-lb. pressure, and 5000 Btu at 4.0-lb. pressure.

The formula on p. 194 of the Handbook can be used by converting pounds to inches of water for "h." (Multiply pounds by 28 to convert to inches of water.) A satisfactory figure for "K" is 1350.—Ed.

•

Gentlemen:

We have been trying to work out a quantity discount on bulk deliveries of LP-Gas, and find so many difficulties in working this out that we are wondering what has been the experience of other dealers, and their solution.

We have about 200 bulk tanks, some rented and some customer-owned, which we service. These tanks vary in size from 125 to 1100 gallon, with a majority of the tanks being 125 gallon. We think that a scale price, based on the size of the tank, rather than the gallonage delivered would be fair. The reason for this is that we will often deliver a small gallonage to one of the users of large tanks if gas is scarce, or if we happen to be near the tank with a partial load.

S.H.

New Mexico

The reduction of fuel prices for quantity deliveries is influenced by several factors. The size of the tank, the distance traveled in servicing the customer, the condition of the roads which have to be traveled are all things which must be considered, but additional consideration should be given to such factors as the quantity of fuel which is consumed, summer versus winter usage, and prompt payment of bills by the customer.

We find that many dealers reduce the fuel price as much as one cent per gallon for each increase in tank size. For example, if they deliver fuel into 150-gallon tanks at 14 cents per gallon, they will deliver it into 250-gallon tanks for 13 cents, into 500-gallon tanks at 12 cents or perhaps 11 cents, and into 1000-gallon tanks at 11 cents or even 10 cents per gallon. These prices are often further modified for customers who make prompt remittance or who maintain good summer loads.—Ed.

•

Gentlemen:

I operate three bulk plants and have three garages. I would like to install overhead suspension heaters in them before winter. What is safest way to do this with propane delivery trucks in them at night.

G.S.

Kansas

We would suggest a vented wall furnace which obtains its air from outside the building and discharges the gases outside the building. Such a unit is specifically designed and constructed to be installed in an outside wall. All the open flames are in the compartment connected to the outside and the inside air circulates around the combustion chamber.

In the morning, before starting the trucks, the garages should be opened so that any gas which might have leaked from one of the trucks could be dispelled before the motors are started.

Trucks should be carefully checked for leaks every day, especially around the valve stems, etc., and some ventilation should be provided near the floor.—Ed.

Comment

LITTLE by little the liquefied petroleum gas industry is becoming statistics conscious.

In past years the absence of detailed information regarding the industry's growth has retarded the compilation of facts which were badly needed by government authorities in wartime; by producers in estimating demand; by manufacturers in long-range planning; and by the dealers, themselves, in determining trends in utilization.

The figures showing the annual marketed production released by Phillips Petroleum Co. and the U.S. Bureau of Mines were entirely of a general nature until two years ago when a breakdown of five geographical districts was made.

Recently a survey was released of fuel shipments into every state (see June BUTANE-PROPANE *News*, pp. 168-169). Meanwhile appliance manufacturers have been induced by GAMA to segregate their LP-Gas shipments from those for natural and manufactured gas uses; BUTANE-PROPANE *News* has completed an analysis of the entire industry to secure a national listing of bulk plants and their storage capacities, and also has under way at this time the preparation of a directory of LP-Gas automotive filling stations. And recently two tractor surveys have been made to determine the development of power uses on farms.

Only as dealers, producers, and manufacturers cooperate to make vital information available will our industry be able to reveal its position to itself, but also to obtain official recognition of its rightful place in relation to other fuels, and especially at this time to receive its just due from Washington when priorities, allotments, and discriminations are handed out by the myriad "authorities" vaguely labeled "defense administrators," under the title of new business restriction orders.

The LP-Gas industry not only has nothing to hide but has a record of which to be proud, and everyone concerned should be interested in contributing figures upon which our national position can be determined.

Will Not Restrict Advertising

The Office of Price Stabilization has denied that general manufacturers' pricing regulation, CPR 22, will severely restrict manufacturers' expenditures for advertising, according to Assistant Director for Economic Policy Gardner Ackley.

The general manufacturers' order, and subsequent regulations based upon it, provide generally for pre-Korean prices, plus allowances for increases in factory labor and material costs, but do not allow for increases in general administration and advertising costs.

"But the fact that neither advertising nor other overhead cost increases are taken into account does not mean the Office of Price Stabilization regards them as any less legitimate or essential than other kinds of costs," states Mr. Ackley. "All the available evidence indicates that the new ceiling prices under these regulations will prove sufficient to provide manufacturers profitable operations. Even if profits are in some cases re-

duced, it is inconceivable that any manufacturer would imperil his future market position by cutting down on his advertising budget.

"The purpose of advertising is to expand sales and thereby to increase profits. There is no reason why this should be any less true under price control than under normal market conditions.

"Manufacturers and advertising men can rest assured that no OPS regulations will be issued which will in any way restrict the use of advertising."

Gas Still Leads

Domestic gas range manufacturers shipped 249,600 units during April, a decline of 53,400 from March, but 4.4% higher than the 239,100 shipped in April, 1950, according to the Gas Appliance Manufacturers Assn.

During the first four months of this year, shipments totaled 1,067,200 units, a gain of 21.7% over the 877,100 units shipped in the corresponding period last year.

The latest available figures on electric ranges indicate shipments of 478,500 units in the first quarter, compared with 817,600 gas ranges, reflecting continued high consumer preference for the gas operated appliances, according to GAMA's domestic gas range division.

"Buy" Word

"Automatic" is the key word and the theme of a national sales promotion campaign for gas ranges announced by James I. Gorton, "CP" promotional director of the Gas Appliance Manufacturers Assn.

"While sales of gas ranges were up 34% in 1950 over 1947," said Mr. Gorton in announcing the campaign, "sales of automatic gas ranges built to 'CP' standards increased 144%.

"These sales increased 144% because 'automatic' is the 'buy' word for every alert appliance dealer in the country."

"CP" is the GAMA trade mark designating automatic gas ranges built to the most modern and highest standards.

Sell!

Manufacturers and dealers must take steps to increase sales efficiency and decrease sellings costs with the same zeal that has marked their efforts to increase productivity of the individual worker at lower unit cost.

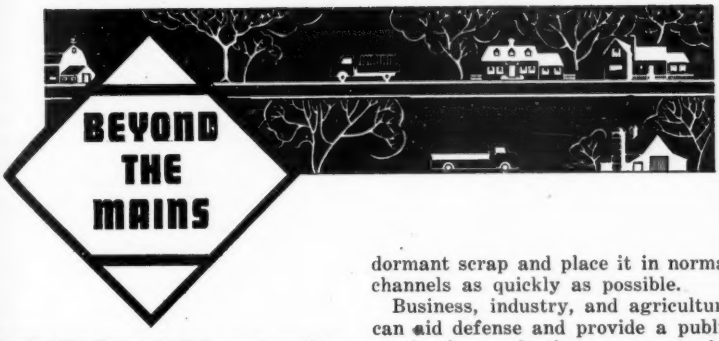
If that isn't done, F. A. Kaiser, vice president of the Detroit-Michigan Stove Co., has warned, America's future economic strength is threatened.

"The problem confronting all of us today, is that of keeping our sales volume in step with our great capacity to produce," the Detroit industrialist declared. "If we are to continue to enjoy the prosperity which we have known for the past four or five years, the selling effort must be intensified so that more and more goods will continue to flow from our factories. It is axiomatic that when there are no sales, or too few of them, there are no profits; when there are no profits, there is no business; and when there is no business, there can't be prosperity."

New Gadgets

Now you can make coffee by remote control—on a gas range by simply putting the percolator on the burner the night before, setting a clock attached to the back-guard of a new automatic gas range, and finding the coffee perked automatically when you get up.

The same, says the Gas Appliance Manufacturers Assn., in announcing 30 new gas range improvements, goes for the dinner roast. The clock-control oven enables you to start the roast "in absentia" and find it done to a turn when you get home from work or a visit. Incidentally, the same timing device also turns off the oven.



A STATE-BY STATE, and nation-wide program of off-season fuel buying has been inaugurated by Secretary of the Interior Oscar L. Chapman in a message to all state governors urging that the states put forth effort to promote public support of fuel storage during the summer months. The cooperation of the state governors, it is felt, will contribute to assurance of the success of the buying program by all fuel consumers—governmental, industrial, and domestic.

Secretary Chapman pointed out that last winter's acute fuel shortages in certain areas were alleviated by "near miracles in transportation" and warned that the "mounting burden of defense and defense-supporting traffic will, by fall and winter, make such heavy demands on the nation's transport capacity as to create the prospect that relief cannot promptly be provided for spot areas in distress."

"Fuel consumers can help materially to prevent spot shortages . . . hoarding fuel is in this sense a patriotic contribution . . ." he said.

After Scrap Again

Due to the low inventories of heavy industrial iron and steel scrap, the National Production Authority is conducting a special program to seek out dormant scrap and place it in normal channels as quickly as possible.

Business, industry, and agriculture can aid defense and provide a public service by conducting emergency inspections of plants and properties and move idle, obsolete machinery and equipment to the nearest scrap dealer.

Retail Tagging Under CPR 7

Stores selling the many articles covered by Ceiling Price Regulation 7 must have each article marked or tagged with the selling price, the Office of Price Stabilization states.

The selling price may be marked on the article itself, on a ticket or tag atached to the article, or may be shown on the shelf, rack or bin containing the article. In any case the price must be clearly visible to, and understandable by, the store's customers.

Also, each store must post, in a prominent and clearly visible position, a sign reading:

The prices of merchandise in this store are no higher than the OPS ceiling prices of the articles.

NPA Order on Ranges

As a result of NPA Order M-47A, manufacturers of durable goods, including ranges, cannot use in excess of the following percentage of usage during the base period: iron and steel products and parts, 70%; copper products and parts, 60%; aluminum

products and parts, 50%. The base period is the 6-month period ending June 30, 1950, or, at the option of the manufacturer, the 6-month period ending Dec. 31, 1949.

The order, limiting the use of iron, steel, copper and aluminum, went into effect July 1.

Deferments

Back in June in this column we said that LP-Gas workers were included in the revised list of "essential activities."

This is wrong, writes Art Kreutzer, but too late for our July issue. The list includes workers in the production end only.

The LPGA is endeavoring to have the distribution branch included in order to provide a basis for draft deferments for men in key positions.

PAD-26 Priorities

Form PAD-26, for use by oil or gas operators in applying to the Petroleum Administration for Defense for permission to begin a construction project, for an allotment of controlled materials, or for other priorities assistance in obtaining materials and equipment for a construction project, has been distributed by PAD to the petroleum and gas industries.

The new form will be used in the administration of NPA Order M-46, Amended, providing cross-the-board priorities assistance for all segments of the petroleum and gas industries and M-46B, establishing construction controls over the two industries.

Copies of the form may be obtained by writing the Petroleum Administration for Defense, Interior Bldg., Washington 25, D. C., from PAD field offices in New York City and Chicago, from field offices of the United States Department of Commerce, from State petroleum regulatory authorities, oilfield supply companies, refinery and gasoline-plant contractors, and petroleum and gas trade associations.

Oil and gas operators desiring priorities assistance or construction authorizations in the U.S. must file an original and three copies of Form PAD-26 with PAD at Washington. A similar application for use by operators desiring to obtain priorities assistance on materials to be used in Canada will soon be available from the Petroleum Division, Department of Trade and Commerce, Toronto, Canada. This application must be filed with the Canadian agency. (The provisions of NPA Order M-46B do not apply to Canadian operators.)

Form PAD-26 must be filed by all domestic oil or gas operators undertaking a construction operation (1) in which $5000 or more of controlled materials will be used, or (2) involving a building, warehouse, office, residence, or other enclosed structure, for which priorities assistance is required for $5000 or more of all materials.

Whether the form is used for authority to use materials or for priorities assistance, operators must adequately justify the proposed use of the materials and report the quantities required.

Form PAD-26 should not be used by operators seeking priorities in obtaining materials for use in "small construction operations," that is, construction operations requiring less than $5000 of controlled materials. Nor should the form be used in procuring used materials or any materials obtainable without priorities assistance.

Priorities assistance for materials for MRO purposes or for small construction operations is obtained through the use of a delivery-order filing system.

Clip

ON THE DOTTED LINE

By Joe Baer

"THE comforts and conveniences of GAS cooking are YOURS..." This is the basic message of the simple circulars mailed annually to 65,000 rural boxholders by Fowler Butane Gas Co., Inc., Hattiesburg, Miss.

It's a case of a midget doing a job of jumbo proportions. Only three circulars have been mailed in three years! Yet last year's circular boosted tank sales 33%! This gain was registered in spite of record sales the previous year.

Last year's August circular was a letter-press job utilizing stock cuts and type (Fig. 1), printed in two colors on both sides of a sheet 9½ x 12½. On the inside Fowler's featured its well-drilling equipment with copy and illustration, small space pitches for refrigerators, water heaters, and space heaters, and a coupon (Fig. 2) to be clipped and mailed.

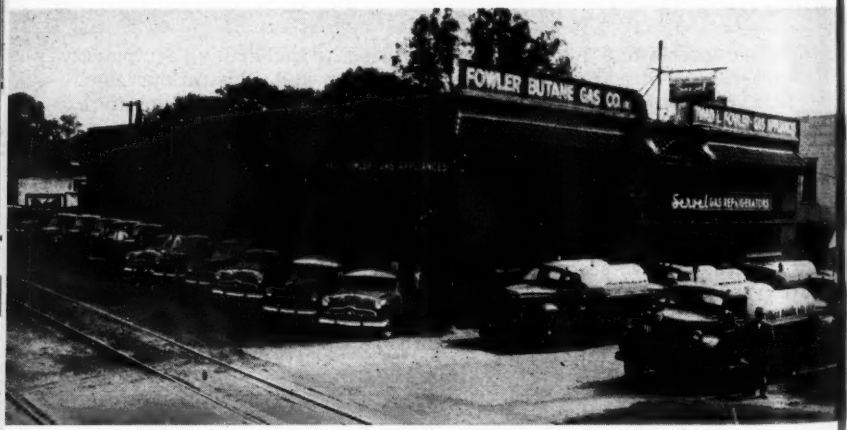
More than 1500 persons hunted up the family scissors or a razor blade and mailed the coupon to the Fowler main office. Even now, nearly a year later, answers are trickling in. Many of the older settlers in the rural areas have written Thad L. Fowler and thanked him for sending them the circular!

Result: The balance of the year Fowler's sold more than 1300 tanks, 342 over the record year of '49. They sold 260 more ranges than

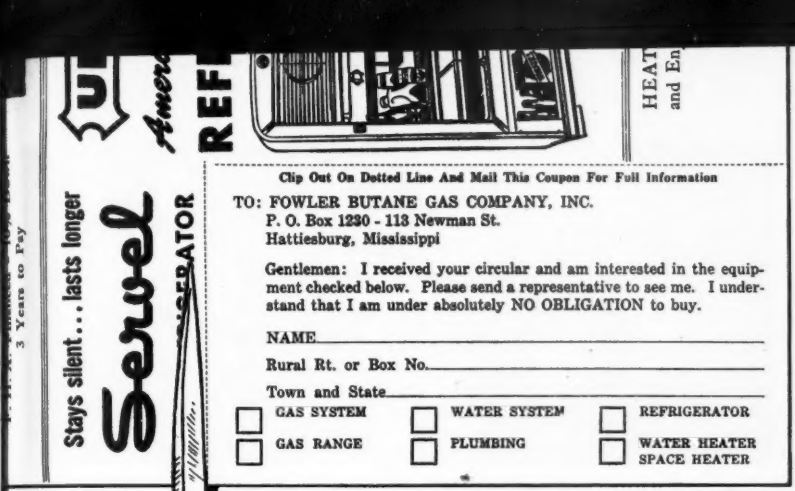
IN THIS DAY of sophisticated selling, the one-round knockout sales argument, and "selling made easy" short courses, the old-fashioned, economical, volume effort has too often been ignored. In direct mail, the highly selective prospect list and the power-packed, expensive mailer with at least four "drop-outs" (return cards, one-pitch sales sheets, etc.) have been accepted as basic practice.

Here the volume effort of Fowler Butane Gas Co. demonstrates the efficacy of the old method. Fowler's even made it difficult for the prospect to reply. The coupon had to be studied, the special equipment in which the prospect was interested noted, an envelope and stamps procured. A year later these coupons were still drifting in.

What does this prove? That where a product or service is genuinely needed, the power-packed advertising punch does not apply. Fowler's could be sure of one thing—the 1500 persons who replied to its 65,000 mailing were PROSPECTS. They had all taken some thought and some TROUBLE to reply! Largely as a result of these mailers, Fowler's is building a basic, well-rounded gas and appliance business in the 40 counties of the eastern half of Mississippi.—EDITOR.



Fowler Butane Gas Co. lines up its transport delivery tank trucks, service and sales cars at its headquarters in Hattiesburg, Miss.



Clip Out On Dotted Line And Mail This Coupon For Full Information

TO: FOWLER BUTANE GAS COMPANY, INC.
P. O. Box 1230 - 113 Newman St.
Hattiesburg, Mississippi

Gentlemen: I received your circular and am interested in the equipment checked below. Please send a representative to see me. I understand that I am under absolutely NO OBLIGATION to buy.

NAME_____

Rural Rt. or Box No._____

Town and State_____

☐ GAS SYSTEM ☐ WATER SYSTEM ☐ REFRIGERATOR
☐ GAS RANGE ☐ PLUMBING ☐ WATER HEATER ☐ SPACE HEATER

1500 persons clipped this direct mail circular coupon. One year after the mailing, the coupons were still drifting in.

in '49. In fact, they increased their appliance sales across the board. Their basic liquid gas business shot up in proportion.

Fowler's is a family operation. Thad L. Fowler, pioneer in the liquefied gas and appliance business in south Mississippi, is president; Mrs. Fowler is the company's secretary-treasurer; and their son, Lewis Fowler, is vice president. The company bulk plants have a storage capacity of more than 600,000 gals. in Hattiesburg, Laurel, Meridian, Corinth, Prentiss, Columbia, Waynesboro, McLain, Quitman, Scooba, and Pinola.

In seven of these cities Fowler Butane also has excellent appliance showrooms.

Mr. Fowler has been active in the Hattiesburg field for 30 years, and has operated his own business since 1932. The company serves more than 7000 customers in 40 counties . . . in Mississippi, western Alabama, and south-eastern Ten-

Some of the key members of the Fowler concern (from left, bottom row): E. E. Swiney, branch manager, Corinth; Mrs. Fowler; Thad L. Fowler; D. S. Dearman, general manager. Center row: J. F. Wood, service manager; R. S. Sanders, fleet superintendent; J. B. Waltman, office manager; Henry W. Holifield; D. S. D'Olive, credit manager. Back row: F. H. McLaurin, manager, Lauren and Waynesboro branches; J. W. Whitfield, manager, Prentiss and Columbia; Melvin McLain, salesman, Columbia; Robert Hill, manager, Meridian.

nessee and operates a fleet of 70 cars and trucks.

Here's how Henry W. Holifield, purchasing, advertising, and sales manager for the pioneer company, plans this well-rounded business:

The first aim is to sell the rural prospect a gas system and the basic appliance, a gas range.

After the installation of the basic gas system and range, the advantages of complete modern gas living are dramatized.

In short, after the prospect has a gas system and a gas range, he can plan on additional appliances, a water system and the comforts of plumbing.

Below: This fleet of transport trucks wheels the liquid gas from refineries to bulk plants.

His circulars stress complete installation, and one-contract financing through FHA.

By offering the rural prospect a chance to start with gas and progress to a water system, plumbing, automatic water heating, gas refrigeration, and even well drilling, the company gives him a complete plan for home modernization.

The direct mail circulars offer a complete package of comfortable living. If a family already uses a liquefied petroleum gas range, they can be interested in a water heater, a gas refrigerator, one of a variety of space heaters, or plumbing.

Mr. Holifield, who has been with Fowler's for 14 years, contacts each branch once a month. He checks floor displays and brings the branches up to date on latest sales developments.

These policies, developed by the Fowler family during 14 years in the LP-Gas business (19 years in the appliance field), are building a sound, basic, well-rounded business.

Salt Dome Storage May Solve Winter Fuel Shortage

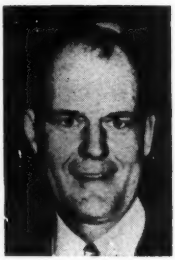
WE ARE all keenly aware of the long existing problem of how to conserve LP-Gas in off seasons in order to supply our consumers during seasons of peak demand.

Last year from the rostrum of the NGAA convention in Fort Worth, I made the prediction that by the time of the next convention your storage problem would be solved. That statement was not conjecture, as we had had under way for a long time a development program to provide economical, artificially-formed, underground storage near manufacturing plants and near consuming markets.

The development stage of this means of storage is now behind us with the proven commercial use of thousands of barrels of such storage facilities.

In light of the geographical locations of salt beds and salt domes in respect to manufacturing plant locations, transportation facilities, and ultimate markets, and in light of the cost and performance of commercial storage reservoirs in these salt sections, it does appear the nearest approach to an overall solution to the industry's storage, transportation and

By Frank Matheny*
Sid Richardson Gasoline Co., Fort Worth, Texas



W. F. MATHENY

marketing problems lies in the extensive use and strategic location of salt section reservoirs.

Fig. 1 shows the location of these beds and domes as assembled from many sources of information. Note the massive beds of the Permian Basin Area underlie practically all of the west Texas, New Mexico, Panhandle and South Hugoton extraction plants. All of these plants have storage under their plant sites to accumulate off season surplus to meet all peak season local demand, and those fortunate enough to have LPG pipeline outlets can leave their products under their plants until the pipe lines call for it.

The gasoline and cycling plants around the coast from south Texas to Mississippi are literally interspersed with salt domes. In eastern Lousiana, in Mississippi and Alabama, the territory whose consumers probably suffer most from winter famines, salt domes are almost ideally situated in relation to markets. What would be more logical than to use your tank cars all summer moving surplus LP-Gas into this area, then serve the local consumers through the use of dealers' trucks all winter—diverting the tank cars to other hauls? In fact, some of the Southeastern dealers, veterans of the famine or feast market are today busily engaged in installing thousands upon thousands of barrels of underground storage in these domes.

Observe the salt beds in Michigan, Ohio, western Pennsylvania, and into western New York. Here are storage areas near both domestic and industrial markets.

How to go about installing one of these reservoirs? We have found that most of the required information in the oil country can be had by inspection of oil or gas well logs. The remainder, such as availability of water, salt disposal, desired capacities and withdrawal rates, is readily obtainable in each locality.

Experience confirms the theory that the capacity of the reservoir can be quite accurately estimated by metering the fresh water, taking periodic test on the effluent with a brine calibrated hydrometer and then from a prepared solubility curve, calculate the salt removed or the reservoir space added.

Costs are of a relative dimension. It is obvious that the size of reservoir, location, depth of beds or domes, desired recovery rates, etc., all have their influence. It is also obvious that most of the money is spent before water circulation even starts so that the per-barrel investment varies inversely with size. A 100,000-barrel reservoir should be installed in west Texas for $50,000 or around 50 cents per barrel. A 500,000-bbl. reservoir

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In four recovery tests of the Winkler county (Texas) salt dome storage system by Hydrocarbon Storage, Inc., the recovery percentages of LP-Gas injected were 95.9, 99.7, 99.5, and 99.1.

It is commonly expected that average recoveries will be better than 99% in all cases.

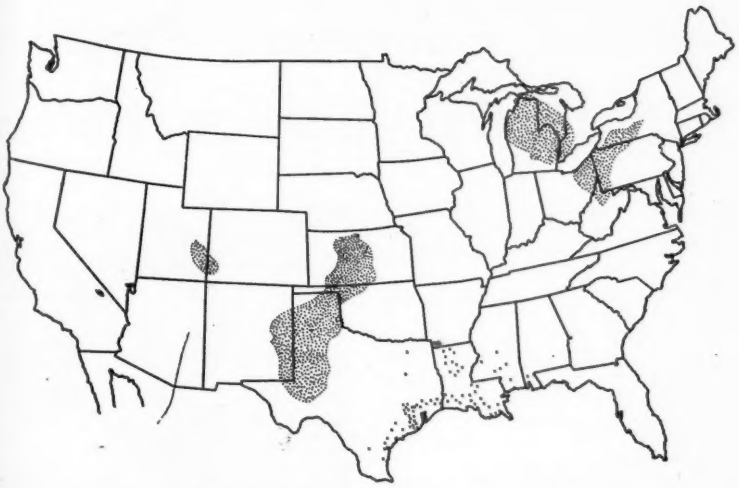

Fig. 1. Known underground saltbeds and domes in the United States.

adjacent to the Mississippi river might go in for $75,000 or 15 cents a barrel.

Pumping pressures and costs at our Kermit plant compare favorably with ordinary plant-to-tank-car operations. Depth of reservoir and size of tubing being the controlling factors, required pressures and attendant horsepower lend themselves to calculation for any location.

Extensive work has been done and is still being done which indicates soluble shales are as effective for storage purposes as are saltbeds.

In conclusion, I would like to say that you now have, or have within reach of your cable-tow, a ridiculously cheap method of storing your LPG products (or any other hydrocarbon), and this year's prophecies for the LPG industry are:

1. You are going to save many dollars in investments while saving for other use untold tons of steel.

2. The flaring or wastage of these products will cease.

3. You will, like the motor fuel manufacturer, as a matter of business routine, accumulate product in off-use season to fill consumer requirements in peak seasons.

4. You will placate the anxiety of present and potential LPG users occasioned by the feast-famine record behind us. In other words, stabilize the most turbulent market in the petroleum industry.

5. You will save yourselves a lot of headaches while making a lot of money, for yourself, your royalty owner, your dealer, and yet save the ultimate consumer money and extreme inconveniences.

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*BUTANE-PROPANE *News* has abstracted this paper which was presented originally at the annual convention of the Natural Gasoline Assn. of America this Spring in Tulsa.

National Promotional Program Tells LP-Gas Story to Nation

WITH the completion in September of its fourth round of advertising, the National LP-Gas Promotional Program will have delivered a total of 312,000,000 hard-hitting sales messages all across the nation.

In a little over one year, the big industry-wide campaign, which is telling the LP-Gas story to farm, small town and suburban prospects through the advertising columns of 50 national, sectional and state magazines, through publicity in thousands of publications of all kinds and through local-level promotional aids made available to marketers, has already made a tremendous impact in LP-Gas markets. Greatly accelerated tie-in efforts by dealers, producers and manufacturers are also contributing heavily to the program's success.

A fifth round of ads, scheduled for fall and early winter, is already in production, the publicity phase of the program is being stepped up every month, and the employe training operation is now being activated.

Discussed for years as the logical answer to mounting electrical competition, the National LP-Gas Promotional Program actually had its inception in November, 1949. It is an industry-wide project in every sense of the word, carrying the sponsorship of four national trade organizations—Gas Appliance Manufacturers Assn., Liquefied Petroleum Gas Assn., National Butane-Propane Assn., and Natural Gasoline Assn. of America. Members of the National Committee are appointed by these associations and they are representative of the thinking of all segments of the industry and all sections of the country.

A modern homemaker, Mrs. Elaine Newquist, finds plenty of practical information about LP-Gas appliance comforts and conveniences in the new consumer booklet, "How to Enjoy Better Living Right Now," produced by the National Committee for LP-Gas Promotion, and available to dealers.

The purposes of the program are as follows: (1) To stimulate sales, advertising and promotion of LP-Gas at the local level; (2) to consolidate the big gains made in recent years by the LP-Gas industry, and (3) to expand national markets for LP-Gas, LP-Gas

appliances and equipment. To achieve these objectives and steal the limelight away from electrical competition, every promotional means at the industry's command will be employed to focus public attention on the many superior advantages of its products and services. To attain this objective, there is needed the support of all industry distributors, producers and manufacturers.

A fourth "merchandising kit" containing samples of tie-in materials to help dealers key their local promotions to the theme highlighted in the current round of national ads was mailed to nearly 9500 marketers early in June.

Members of the National LP-Gas Promotional Program buy these advertising materials at a 20% discount. They are produced by the Beals Advertising Co., 1503 N.E. 23rd St., Oklahoma City 11, Okla.

Well over 50,000 copies of the beautiful new 16-page booklet, "How To Enjoy Better Living Right Now," have been distributed by the LP-Gas Information Service, the program's publicity outlet. These have been mailed out in response to thousands of requests received as a result of program advertising and publicity, as well as to tens of thousands of county agents, home demonstration agents, 4-H Club leaders, editors and others who influence purchases in LP-Gas markets.

Copies of the booklet have also been printed for sale to industry companies for use in their areas. Space is left blank on the back cover for imprinting of local copy. Program members buy these at cost and non-members pay 20 per cent more.

Complete information about the program and pledge forms may be obtained by writing to the National Committee for LP-Gas Promotion, 11 S. LaSalle St., Chicago.

Tie-In With National Advertising, Plus Good Service Pays Off For Dealer

LOCAL "tie-in" advertising materials made available through the National LP-Gas Promotional Program are whipping a tough territorial coverage problem for the United Gas Co., Colorado Springs, Colo.

This concern does business in a 230-square-mile area, half of which is mountainous. Most LP-Gas prospects are ranchers scattered along rural routes.

Newspaper circulation doesn't penetrate very far into the mountain country. Radio reception is good only close to Colorado Springs, according to R. Y. Mills, president of the company.

Direct-mail advertising included in the promotional program's "merchandising kits" supplies the answer to the problem of reaching prospects. It hits the target with pin-point accuracy, according to Mr. Mills.

"We know, too, that we are competing with 'File 13' (army slang for wastebasket). So direct-mail pieces must be attractive and big enough to tell our story fast without asking the prospect to give it very close perusal. Envelope stuffers and folders in the 'merchandising kits' do the best job for us," he asserted.

"The efficient application of advertising doesn't stop with use only," Mr. Mills pointed out. "The factors deter-

R. Y. Mills (right), president, United Gas Co., Colorado Springs, and C. F. Jones, treasurer, point out the close similarity between national magazine advertising and their concern's local-level, direct-mail copy supplied as part of the National LP-Gas Promotional Program.

mining its real value are the functions performed by the advertiser to make his advertising pay off.

"These factors are sincere personal sales effort, actual performance of services, courtesies, etc., promised by advertising, plus the determination of each employe of the firm to properly reflect its prestige and integrity. These, coupled with sound merchandising methods, certainly will bring the greatest value from consistent advertising."

Influences Local Sales

The direct-mail tie-in of the United Gas Co. with the magazine ads of the National Promotional Program also sparks a high-caliber, local-level sales promotion, according to C. F. Jones, treasurer of the company.

"Through local advertising, prospects learn that United Gas sells the exact services and goods advertised in national magazines," he said. "We make sure we are identified with this advertising. Those attractive ads running in national, sectional and state magazines are a tremendous step forward by the industry in gaining prestige, consumer acceptance and, of course, additional sales."

Tear sheets of the national ads are mounted in the United Gas Co. retail store in Colorado Springs. Radio spot announcements from the "merchandising kits" are also used to cover the immediate area.

Mr. Mills finds that local newspapers use the "pattern" news releases contained in the merchandising kits, if only in modified form. But more important, the practice of releasing publicity stories has helped to establish United Gas as the local authority on LP-Gas.

Able to Correct Inaccuracies

"Now the newspapers come to us in search of information. Our own locally-originated publicity stories have better acceptance, too," he added. He also stressed the importance of the national promotion in presenting the true story of LP-Gas and in combating inaccurate statements circulated by the competition.

"Any kind of statement can be made against LP-Gas and may easily be accepted as truth unless we adequately present our case," he said.

United Gas was formed two years ago by the merger of Ranchogas, Inc., and the Rural Gas Co. Both companies were started in Colorado Springs in 1946.

Except for five years in the Army during World War II, Mr. Mills has been in the LP-Gas business since 1932. He was the first to install an LP-Gas storage tank for cooking and heating atop Pike's Peak. It was for the famous Summit House. Another United Gas installation is in the beautiful Garden of the Gods near Colorado Springs.

Selling is Telling

By Leonard Warden, Sr.

THE sum total of my experience in selling adds up to one thing: Selling is telling.*

How well we sell depends upon how well we tell!

I would like to say with all the force at my command that by selling I do not mean order taking, or just waiting on a customer, or just quoting prices. As far as my experience goes, merely quoting prices never sold anything. Price means nothing until the value of the thing is established. Therefore, the value of the product we are selling in terms of service we are rendering should be established before a price is ever given.

Price then means value and in no way does price mean an instrument with which to cut your competitors' throats. I'm talking about selling in this business in the broadest sense—selling LP-Gas service—selling what the service does for the purchaser. Selling what we do for the ones who buy our service. *Selling service!*

The word "serve" has many meanings according to Webster. But the meaning of the word as I use it here means "to work for," "to perform duties for." In our service, we are working for and performing duties for our customers. Not as slaves or serfs, but as masters of the business

It is not courage or guts that it takes—

we are in. Be proud you are a salesman.

We in this business are each playing a part in the building of a great industry and that spirit should dominate each one of us in the selling end of the business. We are rendering a great service to the public.

We are selling the complete service —not a cook stove, not a heater, not a water heater or just gas by the gallon, but we are selling the complete service of what an installation will do for the purchaser.

It is not my purpose to discuss any part of making a sale other than that of how to tell our story in such a way that the prospect can understand

*From a paper read at the June meeting of the Arkansas Butane Dealers Assn.

what we can do for him. How well we sell, depends upon how well we tell.

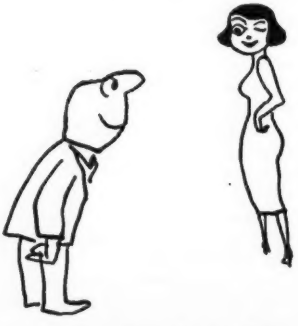
I am discussing *what* you are going to tell and *how* you are going to tell your sales story when you get before your prospect.

Right in the midst of the fuel shortage last winter, when we were completely out of fuel, a lion tamer came in to buy 20 lbs. of gas. Inasmuch as he was a lion tamer, and I was in the LP-Gas business last winter, I felt we had something in common. So, I questioned him some about the act of sticking his head in a lion's mouth, and he questioned me about keeping our customers in LP-Gas in cold winter months.

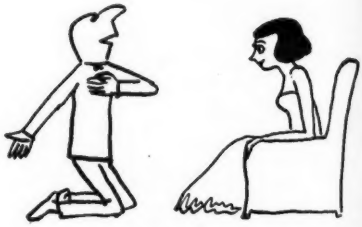
He told me that a lot of people thought it took courage and guts to get in a cage with lions. But he said that it is not courage or guts that it takes but the "knowing what to do when you get in there." I immediately applied that to selling. How true, and what a wonderful lesson I got.

So that part of selling I am talking about is "what to do when you get in there." What to tell and how you are going to tell it.

In my early sales training it was indelibly impressed on my mind that if I could tell my prospect—and a prospect is anyone who needs what I have to sell and who has the ability, either through credit or through paying cash, to make the purchase—the whole story, the complete story, of what the thing I was selling him would do for him, I would get the sale. And my experience has taught me that this is true.



Seeing is understanding.



Feeling is from the heart.

I would like to approach the subject of selling from probably an entirely different angle than you have had it presented to you before:

Seeing, feeling, and uncovering the want.

Seeing is understanding. Feeling is from the heart. And wanting is something everybody does. We all want everything!

As an example of what I mean by seeing and feeling and uncovering the want, in selling LP-Gas as a better heating method, we make our prospect see and feel what we are talking about when we tell him that with gas heat there is nothing to bring in or take out; no fires to build, no smoke. We tell him that he can have controlled temperature; can have his gas heat come on automatically and go off automatically; that with gas heat in his home there is nothing to do but loll around and enjoy the heat.

Surely the prospect can see and feel what I am talking about when I tell him that LP-Gas heat is a "lazy man's heat."

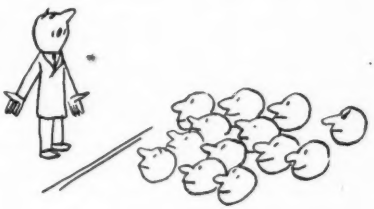
Many of you have probably forgotten the experience we all had last winter in keeping our customers in fuel. We have probably forgotten—at least since the hot weather hit us—the importance of our customer having sufficient storage and taking sufficient gas in the summer months in order for us to supply him with his winter needs on the basis of 1½ gallons in the winter for each 1 gallon of gas he takes in the summer months.

Certainly to provide the service our customer expects out of his gas installation throughout the year, we in this business have a job of telling and selling our customers and our prospects on the importance of sufficient storage. We are now right in the middle of our summer months when we must tell and sell our customers on the importance of their taking summer gas at this time and we must tell this story in a way that our customers can see and feel and understand.

Wanting is something everybody does.

If my memory serves me right, the large majority of my customers wanted more gas last winter than we could supply. The cold winter certainly uncovered their want for gas and their want at that time was for anything that would give them more gas when they needed it.

Certainly the average user of our LP-Gas has used other fuel in the past such as wood or coal, and one story they can certainly understand is that they had to store and supply much of the fuel in the summer months. There were large numbers of gas users all over the state who did not have their present storage full



A confession is good for the soul.

of gas when the winter months arrived, and much of this condition was due to our failure to sell our customers on the importance of having their storage tanks full of gas before Oct. 1.

From now until Sept. 31 is the time to do a real selling job that will get the gas in our customers' tanks to provide them with the service they have a right to expect this winter.

Sell increased storage, sell proper storage, sell summer gas, by making your customers see and feel the importance of their doing this now.

A confession sometimes, they say, is good for the soul. I confess publicly before my fellow operators here that I have made many mistakes in the past. We sold too many undersized gas systems and last winter we had too many consumers' storage tanks too low in gas when winter started. Then real winter hit us and with

the cold winter all our chickens came home to roost, and you should know what chickens do when they come home to roost. 'Tis said your sins will find you out, but I say your chickens will come home to roost. If you sell improperly in this business, your chickens can make a big mess for you.

We Are Outnumbered

This business is getting more competitive all the time, and by competitive. I mean our competition is from others than those in our own business. As people have less money to spend, there are fewer things they can buy. There are others selling improved ways of heating, cooking, and water heating. And what I mean by improved methods is an improvement over their present methods. Those selling electrical cook stoves and water heaters are probably our No. 1 competitors. They are selling improved home living methods. They probably outnumber us 10 to one in telling the home improvement and home comfort story. They have more time, more money to spend advertising their products. And, frankly, I believe they are better trained in how to sell their products than we are.

Selling Is Telling

We certainly need to know better just what we in the LP-Gas business can do for our customers. And we need to know how much better we can do for them than anyone else can do with any other service offered. We must know how to tell our story better—how to tell it in terms that our prospects can see and feel, and better uncover their wants for better living conditions.

If we are to continue in this business and fare well against our competitors, we in the business are going to have to get on the ball.

New Edition NFPA 58 Has Revisions on Motor Fuel

The National Fire Protection Assn. has issued under date of May, 1951, a revised Pamphlet No. 58. The primary purpose of this edition was to include the LPGA sub-Technical and Standards committee's recommendations for a revision of the division on the use of LP-Gas as a motor fuel.

The LPGA sub-committee spent the better part of one year in making recommendations for these changes. The committee met at various points throughout the United States to confer with industrymen who were concerned with the application of liquefied petroleum gas for passenger buses and tractors which has developed so widely during the past year. The chairman of this sub-committee was D. D. Buttolph, of Phillips Petroleum Co., and John Knox Smith, LPGA field engineer, acted as secretary.

AGA Issues Bulletins On Industrial Gases

"Advanced Studies in the Combustion of Industrial Gases—Part II" is the second report issued on methods of increasing the number of Btu's from industrial gas in a given space and in a given time by the committee on Industrial and Commercial Gas Research of the American Gas Assn. Part I of this report presented some experimental views of the application of the principle of detonation to the burning of industrial gas.

Part II of the report by Dr. John J. Turin, University of Toledo, and Jack Huebler, Surface Combustion Corp., Toledo, further attempts to develop theories of detonation that would apply to industrial gas when fed at continuous rates. The report records observations and experimental reactions in relation to these theories.

Up from the Sandlots

FRANKLIN R. (Frank) Fetherston is the success product of the old American formula: Thrift, hard work, and boundless energy. Today Frank Fetherston is vice president and technical advisor of the Liquefied Petroleum Gas Assn. and is recognized industry-wide as a top arbiter on rules, regulations, and requirements.

At the age of four, Frank was already playing baseball with boys two to four years his senior on the town sandlots. His defensive skill was equal to any—but, at bat, with the score tied, and a teammate on second, the regulation bat was too much for his pudgy fingers. So he took a standard bat, sawed it off so that he could swing it expertly, wrapped wire tape around it, and proceeded to give the outfielders a workout.

But, whether it was in baseball, or as a circus acrobat performing on the backyard fence, young Frank was not to be outdone by his older playmates. What they could do, he could do, or try—and sometimes try and try again until he attained his purpose.

At the age of eight he was in business, with one of his brothers, in the firm of Fetherston Bros. selling stamps to collectors. The members of the firm were the two youngest members of the Boston Philatelic Society. Collecting, appraising, trading, selling through stationery stores, candy shops, gadget emporiums, and advertising in the *American Boy*, as well as co-authoring philatelic articles for juvenile publications, the brothers developed quite a thriving business.

Contracts for Dandelions

His interest in baseball persisted, however, and he helped to organize a team of 5th and 6th graders which gained much fame in the suburbs of Boston. Again, business acumen loomed large, for the team was largely financed by contracts for digging dandelions out of neighborhood lawns —not only did they get paid for rooting out the dandelions, they picked off the blossoms and sold the succulent "greens."

Before he had finished public school, his family, on their northern New Jersey farm, went into financial tailspin. Frank worked long hours for neighboring farmers, walked three miles each way daily to country school. But this didn't have a dampening effect on his ambition to succeed. At North Plainfield (N.J.) high school he distinguished himself, not only in baseball and basketball, but in his studies, particularly science.

Frank continued his studies at Carnegie Institute of Technology, Pittsburgh, in the field of mining engineering. His freshman year he sold shoes, packed merchandise in a swank grocery, and delivered newspapers—still earning exceptional grades. Vacations he worked as an extra crewman on trains hauling livestock to New York —a "cow-sitting" job. In his sophomore year he set up a partnership with his roommate offering a tutoring service which took care of most of his expenses for the balance of his time at Carnegie Tech.

Well into his senior year at Tech, Frank enlisted in the regular Army, and was assigned to the field artillery detachment at West Point, and then applied his mathematical knowledge at the Field Artillery Officers' school at Louisville, Ky., where he was commissioned a second lieutenant, in time to serve three years in World War I. The war over, he worked in several fields—printing equipment sales, metallurgical smelting and refining, manufacture of inorganic chemicals, including cyanides—before hooking up with the Northern New Jersey Water District, where he worked on the design and construction of the Wenauque Aqueduct which carries water to the city of Newark.

About this time the Compressed Gas Manufacturers Assn., New York, was seeking a successor to John Lyening, and Fetherston was selected for the job—some 25 years ago—and he has retained the position to this day. When the National Bottled Gas Assn., now the Liquefied Petroleum Gas Assn., was organized—a sort of companion to the Compressed Gas group —he took over the job as secretary-treasurer—at the outset without salary. He helped nurse the new organization along until it secured enough members and income to start doing a real job.

Commissioned a Major

In World War II he was commissioned a major and commanded the container branch of the U. S. Army, working closely and effectively with the Navy and the WPB on all types of containers.

Today his association work brings him in close contact with the Bureau of Explosives, the Interstate Com-

merce Commission, the American Standards Assn., the American Petroleum Institute, and other associations and regulatory bodies concerned with specifications and regulations pertaining to equipment used by either the Compressed Gas Assn., as it is now designated, or the Liquefied Petroleum Gas Assn.

Frank Fetherston is recognized as one of the best-informed man in America on rules, regulations and requirements of the industry. He has made major contributions from his excellent technical knowledge and special abilities toward the formation of rules and regulations governing the sensible development of the liquefied gas industry from its meager beginnings to its present state of successful operation.

Not only is Frank's ability and objective service for the industry held in high esteem in the United States but it is also recognized in Canada and South America. Last year, and again this year, he attended, as "western" delegate, the meeting of the International Standards Assn. in Europe.

So this man, Frank Fetherston, yet in his early 50s, whose ambition on the baseball sandlots, stamp-selling, tutoring, as an Army officer, and through his 25 years with the Compressed Gas. Assn. and the LPGA, was not merely to succeed but to excel, has paid rich dividends to his country, to the gas industries, and to himself. He will never, voluntarily, rest on his laurels. He will continue to build his capacity for a greater measure of service on his foundation of achievement.

Truly, Frank Fetherston is a major leaguer; he hits well, fields well, and helps the LP-Gas industry to keep in front of all competitors.

—Keith Clevenger

Butane-Propane Power Manual To Be Published Soon

The amazingly rapid development of the use of butane and propane in internal combustion engines, has created a wide demand for a manual on the principles of LP-Gas carburetion.

This need is now to be met for the first time by BUTANE-PROPANE *News* which has in preparation a complete handbook on installation, service and conversion requirements. Titled BUTANE-PROPANE POWER MANUAL and illustrated extensively with photographs and drawings, it will be of pocket size and bound in long-lasting, flexible covers. The book will contain 350 pages of basic information for mechanics making conversions or servicing them. It will also include catalog information upon all current models of LP-Gas carburetors, with parts and functions of parts clearly identified.

Extensive Research Employed

The book is the result of many months of research, compilation of known facts and recording of the best experience in applying LP-Gas to internal combustion engines. The author is Carl Abell, a member of the S.A.E. for 20 years and an engine man highly qualified to prepare such a text.

The price will be $3.50 per copy and it can be ordered in advance by addressing BUTANE-PROPANE *News*, 198 So. Alvarado St., Los Angeles 4.

The BUTANE-PROPANE POWER MANUAL adds one more vital service offered by this magazine to the many which have benefited industrymen since 1931. Among the most important of these are the HANDBOOK BUTANE-PROPANE GASES, THE BOTTLED GAS MANUAL, AND THE BUTANE-PROPANE CATALOG.

Transferring LP-Gas With Liquid Pumps

By Lawrence W. Smith
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In 3 Parts—Part 2

It has been established that the formation of vapor in the pump inlet line must be avoided. Vapor interferes with proper pumping, and results in reduced pump output. Not only must vapor be prevented from forming while the pump is running; it must also be kept from collecting in the pump and piping at times of the day and night when the pump is not being used.

There are two principal ways that vapor is developed. One is through pressure reduction, which has been discussed earlier. The second is through heat, which will be considered now.

(2) Vapor Formation Caused By Heat

Heat is a common source of trouble because the several ways that heat appears are not well understood by many engineers working in the LPG industry. Heat must always be considered carefully when designing a butane-propane pumping installation. It is important to do everything possible to eliminate all sources of heat around the pump and piping; and a way should be provided to get rid of vapor if it should be formed in the lines by the action of some heat source that cannot be removed completely.

A. Heat Caused by the Sun. This type of heat is perhaps the easiest to understand. We all know that many LPG pipe lines are exposed to the sunlight during the day because the lines are often placed aboveground. A certain amount of the sun's heat is absorbed by the liquid in the lines, and this will cause some of the liquid to boil and make vapor.

Vapor is not slow in forming as many people believe. With a bright sun on a clear day, a large volume of vapor can accumulate in a matter of a few minutes, when the pump is not running. It can be easily shown through a calculation with figures available in many engineering handbooks, that enough vapor can be formed in less than an hour to blow all of the liquid from the pump and inlet line back to the storage tank. If a means to remove this vapor is not provided, the sun's heat will create a large amount of vapor in the pump and piping in a short time.

Since sunlight is brightest in the summertime, more troubles from vapor formation are usually experienced in this season. However,

vapor may be easily formed whenever the sun is out. The amount of vapor in the line depends as much upon the *brightness* of the sunlight as upon the *temperature* of the day. These troubles can occur as easily on a clear winter day with the temperature at 30°, as on a muggy, hazy summer day when the sun is mostly obscured, even though the temperature may be up to 80°.

The heat of the sun has a greater effect upon liquid butane than upon liquid propane. Because of the lower pressures in butane systems, vapor formed there takes up a greater volume than it would in a propane system. If the sun's heat takes 15 minutes to form a certain volume of butane vapor, an equal amount of heat will have to act continuously for 50 minutes to form the same volume of propane vapor.

Avoid Vapor Lock

We all know what happens if the inlet line gets full of vapor and the pump is started. The pump draws the vapor to itself, gets full of vapor, and is "vapor locked." Since pumps will not move vapor, and are efficient only when handling close to 100% liquid, the vapor-locked pump may grind away for a long time after it is started before it is able to push this vapor into the tank being filled. If we are trying to fill cylinders or other small tanks with this pump, the unit will have to build up a *pressure* on *gas* in order to purge itself of vapor.

During this period before the pump is purged, the pump is running bone dry. The heat generated by the pump itself is not carried away by liquid through-flow, and

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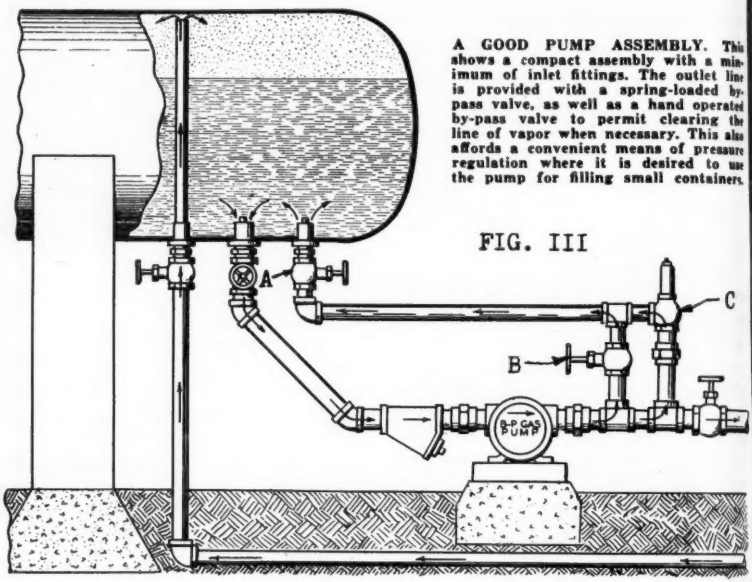
this heat instead builds up in the pump and aggravates the condition. The pump interior bearings and the pump packing may show damage or excessive wear due to the action of the heat generated in these parts while the pump is running dry. It is not unusual to note that pumps so abused have packing dried out or melted, and interior bronze bushings take on a "blue" or "blackened" appearance.

These signs are usually definite indications of a dry running condition. When they occur, the cause of the vapor accumulation should be corrected, as otherwise the cost of handling fuel through the pump will always be high, due to reduced output and more frequent repairs. Inasmuch as all types of pumps must have packing, and nearly all types of pumps have interior sleeve bushings to properly support the main shaft, these signs of dry running should be common to all makes of pumps used in LPG service.

B. Ground Heat. In parts of the country where severely cold winters are experienced, the pump may be mounted aboveground while the piping may be underground. The heat of the ground may cause vapor formation in the underground pipes in



A GOOD PUMP ASSEMBLY. This shows a compact assembly with a minimum of inlet fittings. The outlet line is provided with a spring-loaded by-pass valve, as well as a hand operated by-pass valve to permit clearing the line of vapor when necessary. This also affords a convenient means of pressure regulation where it is desired to use the pump for filling small containers.

FIG. III

the same way that the sun's heat causes vapor formation in above-ground pipes.

C. Pumps Mounted in Partly-Heated Buildings. In areas where heavy snowfalls are common, it is customary to build a special shed or "pump house" to protect pumping equipment. This pump house should be open to the outside, so the pump will be at the same temperature as the storage tank and piping. If the pump house is heated, or partly heated, through being adjacent to another heated building, this heat will cause vapor to form in the pump housing. Generally speaking, it is satisfactory to have a portion of the pump discharge line in a heated building, provided that the pump is mounted lower than any heated part of this line. We have in mind in particular heated shelters built to house cylinder filling manifolds. The pump must be kept completely out of the heated area, however.

D. Exhaust Lines from Truck Engines. On trucks, in cases where it is necessary to run the truck engine exhaust close to any part of the pump piping, the piping or the exhaust line should be insulated. This will help prevent the transfer of heat and accompanying vapor formation in pump or piping.

E. Bypass Valve. The action of a pump bypass valve creates heat. In installations where the bypass valve

is often in operation, the valve should be installed to discharge back to the storage tank, thus preventing the recirculation of heated LPG through the pump. This very important source of heat will be discussed in detail later.

F. Miscellaneous Heat Sources.

a. Steam or hot water pipes run too close to LPG pipes.

b. Warm fuel from refinery production lines run into storage tank through the same piping from which the loading pump makes withdrawal.

c. Truck pumps are exposed to heat reflected from the road when trucks are driven long distances in hot desert areas.

d. There are other less common heat sources that have not been mentioned. The above list should not be considered complete.

A satisfactory way to overcome difficulties with vapor formation in the pump and inlet piping is to make the inlet pipeline slope upwards to the tank, as in the installation pictured in Figure III. The slope need not be as great as shown. An inch or so per foot of length is enough so that any vapor bubbles formed can rise and travel back into the storage tank.

If there is some piping arrangement in the inlet line that will prevent this vapor from bubbling back to the tank, we call it a *vapor trap.* In a tank having a dip-tube liquid outlet, as shown in Figure IV, the

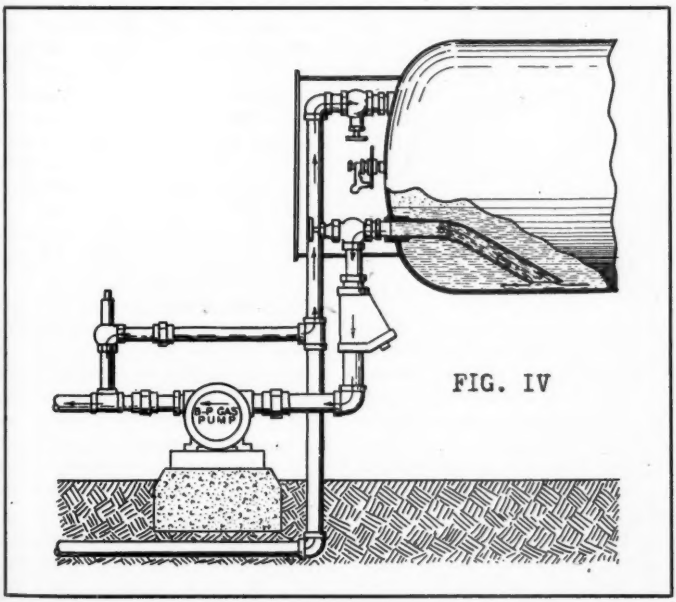
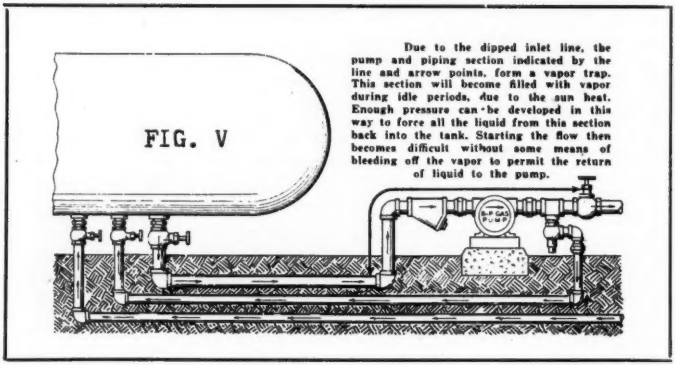


FIG. IV



dip-tube is such a trap. Vapor bubbles formed in the pump and adjacent piping will rise through the strainer and angle valve to the highest part of the pipeline, the point where the dip-tube runs through the tank wall. The bubbles will collect at this high point, because they will not run downhill through the dip-tube into the tank. For this reason, a storage tank with a liquid outlet in the bottom, as shown in Figure III, is much to be preferred. In this case, the vapor bubbles enter the tank and come to rest in the vapor space above the liquid, where they are completely dispersed.

Another common vapor trap is seen wherever inlet piping is run underground, as shown in Figure V. In the summertime, vapor forming in the pump and aboveground piping, due to the sun's heat, will tend to collect in the pump. In the winter, vapor formed in the underground piping, due to ground heat, will rise and collect in the pump.

If any part of the pump inlet piping is higher than another part between it and the storage tank, this high point cannot fail to be a vapor trap.

Sometimes vapor traps may be created by the way the installation is handled by the operator. Going back to Figure III, we again note a good pumping assembly that took special thought to design. The purpose of the sloping inlet line can be defeated if it is the practice of the operator to leave the tank valve A closed at all times when the pump is not running. This allows vapor forming in the pump and pipeline to collect behind the closed valve. In certain cases this vapor may lock the pump when it is started.

We have all seen piping systems where slight leaks are present. These leaks may occur in threaded pipe joints, through valve stems, through bad strainer gaskets, through pump packing, and numerous other parts. In such systems it is usual as a safety precaution to close all the valves at the storage tank when stopping work for the night.

When the pipelines are shut off, liquid leakage cannot be replaced from the storage tank. During the

night, most of the liquid in the pipes may leak out, leaving a large proportion of vapor in the pipe lines. When the tank valves are opened in the morning, and the pump is started it will have to purge itself of all of this vapor unless means for removing the vapor are provided. To minimize this trouble as much as possible, service the system to remove the leaks. Repack the valves, tighten leaky joints, and replace old gaskets. Obtain packing for the pump that will not leak. A little time spent in this type of service will pay dividends three ways:

1. **Eliminate a fire hazard.**
2. **Eliminate a vapor lock condition that may wear the pump excessively.**
3. **Save as much as $5 a day in the value of fuel otherwise lost.**

In some installations, vapor traps and vapor formation cannot be avoided. There may be other piping or obstructions in the area that have to be piped around, or an ideal system may be too costly to build. Relief from pump vapor lock may still be obtained if some means is provided to bleed off the vapor that collects in the pump and adjacent piping before the pump is started. Some operators have installed a 10% valve in the pump case, and before starting the pump, regularly open this valve until all the vapor is blown off into the air. While this practice does not necessarily break any safety rules, it is unquestionably hazardous. In addition, costly fuel is wasted, as well as the operator's time while he is waiting for the vapor to bleed off.

A simpler, faster, and completely safe way to purge the pump of vapor is to install a hand bypass valve, bypassing the spring-loaded bypass valve, as shown at B in Figure III. This valve can be an ordinary globe or angle valve of 1" size, or possibly 1¼" size for the largest pumps. The operator should be trained to open this valve every time before the pump is started, then start the pump and leave the valve open for a few seconds, depending on the length of the line and the volume of gas accumulation. The pump will be able to purge itself by pushing the vapor back to the storage tank against no back pressure, through the open valve. This is much easier on the pump than if it is forced to purge itself by forcing the vapor into small tanks or cylinders against a high back-pressure.

One of the most common sources of heat added to the pump inlet line is the built-in pump bypass valve, or the so-called "merry-go-round" bypass valve, where the discharge of the valve is returned to the pump inlet line. This type of bypass installation always causes trouble when the pump is pumping more LPG than can possibly be forced into the tank being filled. For example, take a 50 gallon-per-minute pump being used to fill a single 100-lb. cylinder. The flow rate into the cylinder is about 5 GPM, leaving 45 GPM to be bypassed.

In small-tank filling installations it is always good practice to pipe the bypass valve (C in Figure III) to discharge back to the storage tank. If this is not done, and the bypass valve is piped to discharge to the pump inlet line, the same liquid will run around and around in the pump and bypass piping, every time the bypass valve operates. Almost the full capacity of the pump, 45 GPM,

will be recirculating through the bypass valve.

When liquid runs through a bypass valve, heat is generated by the friction in the valve. If a bypass valve is set to open at, say, 40 pounds differential pressure, and if 45 gallons per minute of liquid is running through the valve, 50 Btu of heat are generated every minute. Table 4 has been made up to show how much vapor this heat will form in 1 minute when handling LPG at various temperatures.

Table 4.

Temp. °F.	Butane	Propane
30°	3200 cu. in.	850 cu. in.
50°	2200 cu. in.	625 cu. in.
70°	1550 cu. in.	475 cu. in.
90°	1150 cu. in.	350 cu. in.

The volume of the circulating space inside a pump, bypass valve, and piping in a "merry-go-round" setup is seldom more than 200 or 300 cubic inches. The volume of the space inside a pump with a built-in bypass valve is even less. It is easy to see from a study of Table 4 that only a few seconds of running such a pump system generates enough heat to fill the pump full of vapor. Further recirculation will create enough vapor to blow all the liquid in the inlet line back to the storage tank. Now if the bypassed liquid is piped back to the storage tank, the heat returns *with the bypassed liquid.* The heat does not build up in the pump by recirculation. Such a bypass valve installation will not cause vapor lock trouble.

Note from Table 4 how greater volumes of vapor form at the colder temperatures, and how more vapor forms when butane is being handle than when propane is pumped. Thi is again due to the fact that an vapor formed takes up a greater vo ume at lower system pressures.

Because the vapor formatio discussed in this article depends en tirely upon heat, the precaution suggested apply to any system re gardless of the make or type of pump used. While any pumping unit can be installed in almost any piping set-up with somewhat satisfactory results, careful attention towards preventing vapor accumulations due to the action of heat will pay big dividends. In many cases pump delivery is speeded, and pump life is lengthened materially, when vapor is kept out of the pump. It is as important to study action of heat as the resistance-to-flow of the inlet pipeline.

Summary

1. The many sources of heat acting upon an LPG pump and its piping must be removed insofar as this is possible.

2. After this is done, means should be provided to prevent vaporlock in the pump caused by accumulated vapor formed in the pump and piping while the pump is not running, due to the action of the remaining heat.

3. The most practical means to prevent vapor lock are (1) the sloping inlet line, and (2) the hand-operated bypass valve.

4. Vapor traps in inlet piping are to be avoided wherever possible.

5. In small-tank filling installations, the bypass valve must be piped so its discharge returns to the storage tank.

6. These suggestions are as important as those pertaining to the resistance-to-flow of the inlet pipe line. They apply to the installation of all makes and types of pumps.

PRACTICAL MANAGEMENT

OF AN LP-GAS BUSINESS

Store Location. Cost of Appliance Display

CHAPTER 5

So far we have discussed the qualifications a man should have to enter the LP-Gas business, the amount of capital needed and how to raise it, and the relationship of appliance sales to initial investment.

It is now time to consider what kind of a business place you need and where it is to be located. While it must be admitted that it is desirable to have a display room where the greatest number of people will see it, the kind of people who pass your store is also an important factor. Many in the appliances business have followed a quick road to ruin with oversized showrooms in high rent areas.

Where should your showroom be located? To whom will you sell appliances and gas service?

Your greatest sales volume will come from middle-class buyers with incomes of from $45 per week up, so if you locate your showroom in their trading area you will garner the greatest percentage of spot buyers, but this percentage in proportion to your total sales will be surprisingly small. Over 90% of your sales will come from the market which must first be interested in your product through direct, home solicitation.

The housewife, having an idea of what she wants, will drive to your place of business providing it is reasonably accessible.

The furniture vendors were the first to recognize this fact, which accounts for the great number of so-called "wayside" furniture stores

By C. C. Turner

strung across our countryside. The chain stores also have learned that the motoring public will gravitate by preference to locations where there are ample parking facilities. The trend of appliance merchandisers is to suburban or the less thickly populated areas. Other factors which are driving business establishments to the outskirts are high rent and high taxes, which make prohibitive the cost of doing business in crowded commercial areas.

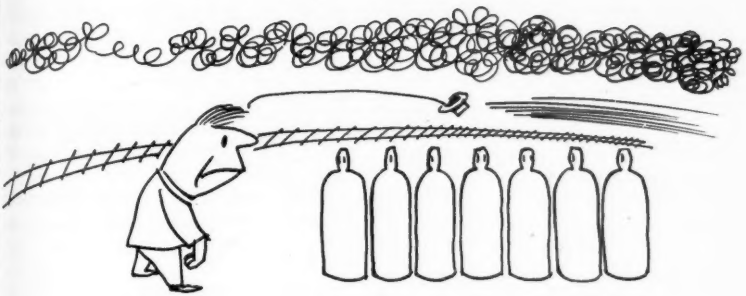
Another reason which makes it seem even more advisable for the liquefied petroleum gas dealer to locate in suburban areas is that zoning bodies sometimes look with disfavor upon large concentrations of LP-Gas in thickly populated or congested commercial areas. For those who insist upon locating their appliance show room on a principal business thoroughfare there is the added problem of having to maintain two places of business, since the one for handling gas may be in a remote area. This is an expense which the bottled gas dealer can ill afford, particularly when he is starting in business.

If you have decided to locate in a rural area it brings up the matter of constructing a place of business, and due to the present high building costs it is a burdensome expense for the beginner.

One successful gas and appliance distributor solved his problem by purchasing a rural residence and remodeling it. Showroom windows were installed in the two front rooms in order to provide display space and to give the property the appearance of a store. Each downstairs room was converted into a model kitchen with appliances on display and heated with a different type of gas heating appliance. A large shed at the rear of the building was provided with movable wall sections and shelf assemblies made out of low cost wallboard so that the shape, size and arrangement of a prospect's kitchen was duplicated and she could see just how the new appliances would look in her kitchen.

At first, the second floor rooms

The added problem of maintaining two places of business.



Just because there is a railroad track adjacent to your property, don't take it for granted that the railroad will put in a siding.

were converted into living quarters for the owner, but as he has prospered he has moved out and these rooms have been turned into additional showrooms.

If you contemplate bulk plant operation at some future time, it should be taken into consideration when you locate. Just because there is a railroad track adjacent to your property, don't take it for granted that the railroad will put in a siding. Even if a siding were laid, it might be outside of the yard switching area and you could have a sizeable switching charge each time that a car was placed. Check with the railroad authorities first. Perhaps they have property available with a siding already installed which they will lease. It will cost you about $5000 to install a siding of your own. Be sure it conforms with the requirements of the Bureau of Explosives for LP-Gas plants.

Local zoning ordinances should be carefully studied and the property purchased should be of ample size to take care of any restrictions which deal with the location of gas handling equipment in relation to buildings, public highways, adjacent property owners and the railroad siding. There is a regulation of the Bureau of Explosives which requires that sidings used for unloading liquefied petroleum gases shall be at least 25 feet away from a main line track and the storage tank at least 50 feet away from the railroad property line.

In some states any structure or platform which has to do with the handling of liquefied petroleum gas has to be at least 100 feet away from an adjoining property line, and 100 feet from any public highway. For this reason no property measuring less than 300 feet by 300 feet should be considered.

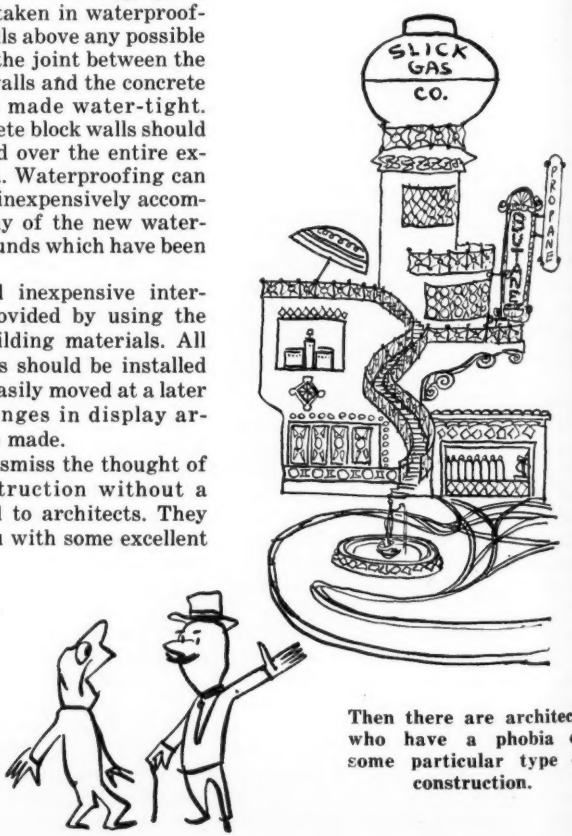
If you do have to build a showroom be sure that you have a loading and unloading platform of truck height, which is approximately 50 inches. Also provide for gradual ramps to avoid lifting appliances up or down to store floor levels. If possible, the grade should not be over 2 inches in 1 foot.

A store with all the floor space at one level is preferable. A one story building erected on a concrete slab slightly above ground level is well suited to your purpose. Outside walls can be of cinder or concrete blocks or of ordinary frame construction.

If you are located in a territory where snow is apt to pile up against the outside of the building, great care should be taken in waterproofing exterior walls above any possible snow level and the joint between the bottom of the walls and the concrete slab should be made water-tight. Cinder or concrete block walls should be waterproofed over the entire exterior wall area. Waterproofing can be quickly and inexpensively accomplished with any of the new waterproofing compounds which have been developed.

Pleasing and inexpensive interiors can be provided by using the new plastic building materials. All interior fixtures should be installed so they can be easily moved at a later date when changes in display arrangements are made.

We cannot dismiss the thought of building construction without a word in regard to architects. They can provide you with some excellent ideas but don't give one of them a blank check against your bank account. They usually operate on a percentage basis and it is to their advantage to get you to spend as much money as possible. Then there are architects who have a phobia on some particular type of construction. Recently there has been a craze for roof construction which is pitched toward



Then there are architects who have a phobia on some particular type of construction.

TABLE 5. NUMBER OF DAYS AN APPLIANCE SALE WILL PAY COST OF SHOWROOM OPERATION, BASED ON 5% OF AVERAGE DOLLAR SALE AS GIVEN IN TABLE IV.

If Cost Per Month of Showrm. Is	The Days That One Average Appliance Sale Will Pay Showroom Expense			
	Gas Range	Gas Wtr. Heater	Gas Re-f'gerator	Gas Space Heater
$ 10.00	22	18	33	12
15.00	15	12	22	8
20.00	11	9	16	6
25.00	9	7	13	5
30.00	7	6	11	4
35.00	6	5	9	3
40.00	5	4	8	3
45.00	5	4	7	2
50.00	4	3	6	2
55.00	4	3	6	2
60.00	3	3	5	2
65.00	3	2	5	1
70.00	3	2	4	1
75.00	3	2	4	1
80.00	2	2	4	1
85.00	2	2	3	1
90.00	2	2	3	1
95.00	2	1	3	1
100.00	2	1	3	1
105.00	2	1	3	1
110.00	2	1	3	1
115.00	1	1	2	1
120.00	1	1	2	1
125.00	1	1	2	1
130.00	1	1	2	−1
135.00	1	1	2	−1
140.00	1	1	2	−1
145.00	1	1	2	−1
150.00	1	1	2	−1
155.00	1	1	2	−1
160.00	1	1	2	−1
165.00	1	1	2	−1
170.00	1	1	1	−1
175.00	1	1	1	−1
180.00	1	1	1	−1
185.00	1	−1	1	−1
190.00	1	−1	1	−1
195.00	1	−1	1	−1
200.00	1*	−1	1**	−1

*Pays expense less than 1 day at $230.
**Pays expense less than 1 day at $340.

the center. This type of construction is much more expensive than the common flat or "V" pitched roof. A roof which pitches toward the center may cost $5000 more than necessary and then become a constant problem because of leakage and snow removal.

Talk with other operators before you build either a store or bulk plant and benefit by their experience, and don't let any architect sell you an impractical idea.

Don't Sit and Wait

You will find that the majority of your customers will have to be invited or brought in to your showroom. You won't get far in the appliance business if you sit inside of the showroom waiting for the buying public to take appliances away from you. If this is your conception of appliance merchandising you had better not get into it.

Display your appliances simply and in neat surroundings. Too elaborate trappings detract from the appliance. It should be the focal point, and any "trimming up" that you do should be to bring out its attractiveness and superior features. Some of the "sales help" advertising put out by manufacturers completely obscures the appliance, thus defeating its purpose.

How many appliances should a dealer have on display? The answer to this question is an important one for it has much to do with the size of the showroom which you will require. Too many appliances on display may confuse the customer. Furthermore, you can almost depend upon it that if a manufacturer had 50 models in his line and you had 49 of them on display, the buyer would select the one which you did not have. That is where catalog selling comes in, so it is not necessary to have a complete line on display, desirable as that might be.

Large showrooms add to your initial cost, increase maintenance, heating, and lighting costs. Heated space for the storage of appliances not on display is an unwarranted extravagance. For the small operator a showroom of only 300 square feet of floor space can be sufficient, but double this is desirable. One drawback of too large a showroom is the quantity of merchandise required in order to make an adequate showing.

One appliance merchandiser with a showroom which measures 40 x 60 feet has stated that it takes about $12,000 worth of merchandise to adequately stock it. A showroom which is poorly stocked creates the impression that the dealer is either in financial difficulties or going out of business.

"Split" Store Agreements

Quite frequently the new gas dealer with limited capital will rent part of a store which is already occupied. This does offer the chance to display appliances, but unless there is some provision for paying the party who attends the store a commission on appliances sold the arrangement is apt to be an unprofitable one. Either the dealer should have someone in his own employ who is in attendance, have such a commission arrangement with the other occupant of the store, or keep away from such an arrangement entirely.

When making a "split" store agreement, it should be specified

what space is allocated to the dealer and he should have the use of one show window, or an alternate week agreement if there is but one show window. All other matters being equal, the side of the store on which the front door latch is located is the better one. This is because the customer faces the side of the store as he opens the door and whatever is located on that side is what first attracts his attention.

The total expense of a showroom exclusive of labor should not be over 5% of the total appliance sales volume, and if possible this amount should be cut to 2½%. What this means in the number of appliances which you must sell each month in order to meet this expense can be determined easily by consulting Table 5 which based on the "Average Dollar Sale" column of Table 4.

As an example, let us take a sales room expense, exclusive of labor, of $75 per month. Based on 5% of the "Average Dollar Sale," a single range sale would pay the rent for three days, a single water heater for 2 plus days, a single refrigerator for 4 plus days and a single space heater for 1 plus days. A sales room expense of $75 per month would not be justified unless you could expect to sell during each month some such combination as 4 ranges, 3 water heaters, 2 refrigerators and 4 space heaters. This is computed as follows:

4 ranges, each paying the rent for 3 days, total days.....12
3 water heaters, each paying the rent for 2 plus days, total days.... 6
2 refrigerators, each paying the rent for 4 plus days, total days..... 8
4 space heaters, each paying the rent for 1 plus days, total days..... 4
Total days.....30

Herein lies a warning to the fellow who expects to make a go of it in the gas business by confining his appliance sales to ranges, alone, in order to take advantage of the high-priced gas brackets which this type of business commands.

Let us say that he is located in a town of 900 families which neither grows or goes backward, like so many self-satisfied American communities, and that he is optimistic enough to think that he can sell 60% of these homes, which would be 540. With a sales room expense of $75 per month he would have to sell 10 ranges per month, and at the end of 54 months, or 4½ years, he would be all done selling ranges until the old ones wore out or a new generation came along with a yen for better and more modern appliances.

Another factor enters into the picture. Appliance sales are of a seasonal nature. Heating appliances sell best at the approach of cold weather. Refrigerators sell best at the approach of and during hot weather. From Christmas until after March

15th appliance sales are apt to drag because of the emptiness of pocket books and the necessity of paying income taxes. Unless you have a large financial reserve it is not safe to even average your expected sales for the year in order to determine how much you can afford to pay out each month for sales room expense. The safest way is to estimate your sales for what you expect to be the poorest month in the year and plan your sales room expense accordingly.

Then there is the fellow who is already established in some line of business and takes on gas and gas appliance sales as a side line. This is an ideal position to be in providing you do not intend to allow the new line to remain in a secondary position forever. If this is your intention, keep out of both of them, for some enterprising fellow who will devote all of his energies to them will eventually come into the territory and trim you good.

Select the most prominent place in your store for the gas and gas appliance department. Why? Here are some figures that will amaze you.

The gross profit on a single average domestic range sale is as much as you will make in selling:

100 gallons of paint, or
400 bags of cement, or
30 kegs of nails, or
3000 pounds of sugar, or
20 tons of coal.

The "deal" is all wrapped up in one package, it is either for cash or through a finance plan, which amounts to the same thing. Think of all the transactions involved in **selling all of these other items.**

Furthermore, if you sell that domestic range to a family of two people the yearly gross profit on the gas sold to them will be approximately the same as that derived from:

31 gallons of paint, or
125 bags of cement, or
9⅜ kegs of nails, or
937 pounds of sugar, or
6¼ tons of coal.

Show me any other item in your store with as great a potential for profits stemming from an original sale and I shall be greatly surprised.

In fact, this repeat business will amount to more than 1¼ times the original retail price of the range! The established retail merchant should make an accurate analysis of the items which he stocks and allocate time and space to them in proportion to what they pay in profit.

Sell the Gas Business

Throw out or retrench upon the unprofitable items and give a substantial portion of your store area to the gas business which will pay greater profits with less effort, less investment, and less worries.

In summary, locate where there is plenty of free parking space, make a careful analysis of expected appliance sales, budget your monthly show room space on the basis of not over 5% of the dollar volume of appliance sales in the poorest month of the year.

If you will do these three things you will have adequate space in which to display and handle your gas business, and you will not be in danger of having a place on your hands which will keep you broke. Remember that most appliance sales are made in the home and not on the showroom floor. The showroom helps in closing the deal, but most of your sales have to be dug out the hard way by ringing doorbells!

Texas Customers Talk Back

A recent poll of Texas customers to learn what they like or dislike about butane and dealer services drew frank customer comment that amazed many Lone Star operators. The results indicated that the customer-dealer relationship has its weak points in Texas—and, by inference, the same criticisms must apply to a good cross-section of the industry.

Three questionnaires were mailed to 10,000 consumers and from the volume of kick-backs it would seem the customers thoroughly enjoyed and made the most of their opportunity.

Read what they say:

The answers to the following questions were computed as a percentage of the local returns.

1. When you call your butane dealer for service or fuel, is the person on the telephone:
   99.9% Courteous .1% Discourteous
2. After your order has been placed does the person on the telephone:
   Show a genuine appreciation for your business 99.9%
   Reflect an indifferent attitude .1%
3. After your order has been placed, is the service you receive:
   Prompt 99.8% .2% Slow
4. After your fuel tank has been filled, do you prefer that your delivery man:
   Contact you and thank you for your order 65%
   Leave without attempting to contact you 35%
5. After your fuel tank has been filled, do you prefer
   That the driver leave you a copy of the delivery ticket 99.8%
   Leave without your seeing the ticket 1.2%
6. Would you prefer to sign each delivery ticket:
   Yes 53% No 47%
7. Would you like for your delivery man to leave you any pamphlets, booklets or circulars describing new butane appliances or equipment you might be interested in?
   Yes 68% No 32%

8. Have you ever changed butane dealers:
   Yes 31% No 69%
9. Which do you thing influences your buying most:
   Radio advertising 31% Direct mail 43%
   Newspaper advertising 21% Bill boards 5%
10. When a service repairman comes into your home to make repairs or adjustments does he:
    Leave your floor and appliances free of grease, mud and smudges:
    Yes 83% No 17%
11. Do you prefer that your fuel tank be filled regularly as needed or do you want your deliveryman to fill your tank only when you call him:
    Regularly as needed 86%
    Only when called 14%

Do you know of ways your butane dealer could improve his service to you?

1. Stoves should be checked and adjusted now and then, especially ones bought from dealers who are at present selling us gas. Your customers should not have to pay for this service.
2. I do think they should check my tank and connections to see that they are in proper order without charge The company I am trading with wants $5 for this service. My butane system cost me close to $400 and a long guarantee went with it, so I think services should be free. I have bought all the fuel during the past two years from this company.
3. Avoid running out of gas when the weather is cold.
4. I do appreciate the way our dealer services our tank. We do not have to worry about it and when we receive our bill, we pay.
5. The dealer, himself, has been gruff and surly, and has definitely not shown appreciation for butane customers. He knows we must buy from him and because of his attitude we would seek other means of fuel, if available. The driver has been extremely agreeable and courteous and gives us fine service, for which we are deeply grateful.
6. One way is to put in the tank the amount of fuel that we have ordered and not the amount he wants you to have.
7. Yes, after you have bought from them don't make us wait two or three months to get repairs made.
8. Handle better butane.
9. Larger tanks should be filled each month so that bills would not be so big at one time.
10. Always be prompt so I would not have to watch my tank and call him to fill it.
11. I would like for every butane tank to be equipped with an accurate gallonage measuring meter. Also want nothing but propane put in my tank.
12. More accurate way of knowing how much gas is delivered in tanks. We have paid for gas we know was never put in tank.

(Continued on Page 97)

13. Learn each customer's needs. Make out route and keep tanks checked and filled. I believe that as a whole more users would be better satisfied.
14. By being more careful where he drives on private property and by being sure tank is in good condition.
15. By keeping tanks filled in winter when it's needed more instead of summer when very little is used. If there is not something permanent in our winter supply, I am sure there is going to be some change to other fuel.
16. There have been mistakes in our ordering butane by phone; also wrote them to deliver butane two different times, but had to call office to learn why we did not have order filled.
17. Use light weight trucks and do not break down so many bridges.
18. Just don't always fill tank when we are gone and charge 1% more if not paid in 10 days. We pay cash and want tank filled only when we are at home.
19. Accept collect calls when you need gas—and not have to call two or three times.

Have you ever changed butane dealers—Why?

1. Butane dealer would not check our gas and we would run out.
2. The other man quit coming around.
3. Would put butane in my propane tank during the winter and it would freeze out.
4. Our other dealer was out of gas.
5. Shows more appreciation for business.
6. Failed to bring us fuel when the roads were bad.
7. We called three times and they did not deliver, so we changed dealers.
8. I think we were paying for more gas than we bought.
9. Because the dealer ran by every few days and left gas when we did not need it.
10. I called for gas in February—50 days later they called to deliver it.
11. Poor service.
12. Former dealer charged me $12.50 to move surface tank to my new home ¾ mile distant.
13. Refused to fill tank because I bought tank from another dealer.
14. Because they would not service us without a larger tank.
15. We had rather pay for butane as our tank is filled; former dealer requested pay by the month.
16. A friend recommended that I change.
17. Could not depend on him to keep tank filled.
18. The one we formerly traded with was too anxious to get business away from other companies.
19. Cheaper.

Idaho LP-Gas Dealers See Fire Demonstrations

LP-Gasmen and Idaho firemen met in Boise June 15 to watch an indoor demonstration of properties and characteristics of LP-Gas put on by Oliver W. Johnson, fire prevention engineer of Standard Oil Co. of California, in cooperation with L. V. Rothrock, president of the Liquefied Gas Corp., Boise, and the LPGA. Following this discussion, the Liquefied Gas Corp. and the Boise fire department put on a field fire demonstration with LP-Gas.

Mr. Rothrock paid special tribute to Fire Chief Steve Taylor and Captain Roach of the Fire Prevention Bureau whose efforts were responsible for the success of the program. The Idaho firemen were attending the Idaho State Fire School in the city June 14-16.

Speakers at the dealers' dinner meeting following the demonstrations were Mr. Johnson, P. C. Rollins. Standard Oil, and Ben Marsh, West Coast secretary of the LPGA.

Huge Military Contracts Awarded to "Algas"

One of the largest single contracts for LP-Gas ever to be let in the West was awarded to the American Liquid Gas Corp., Los Angeles, by the U. S. Army Ordnance Department for its annual requirements for Camp Roberts, Calif.

The contract, awarded in June, calls for between 6 and 7 million gals. of fuel to be delivered to Camp Roberts within the calendar year beginning July 1, 1951. As holders of the contract, Algas will be the sole source of supply for the army base to provide continuous service for heating, cooking, and power requirements.

Last June Algas reconditioned all LP-Gas units and appliances at Camp Roberts. Fuel requirements of the camp will be stored in three separate storage plants.

Two additional contracts were also rewarded Algas, one calling for 1,500,000 gals. of fuel annually by the Naval Ordnance Station at Inyo-Kern, Calif. The second contract with the U. S. Marine Air Base at El Toro, Calif., calls for 125,000 gals. annually.

Southwest Steel Corp., Tulsa, Will Build LP-Gas Tanks

Southwest Steel Corp., of Tulsa, a $100,000 corporation, with Frank P. De Larzelere as vice president, was recently formed to purchase the steel fabricating plant of Sand Springs Road, Tulsa, formerly operated by Southwestern Engineering Co. W. J. McNulty, Jr., Tulsa real estate operator and oil man, is president of the company. Mr. De Larzelere is vice president in charge of sales and Connelly Sanders is secretary-treasurer.

The new company will engage in the fabrication of structural steel for the building industry; the manufacture of oil field heaters and pneumatic storage tanks. The company will also manufacture motor fuel tanks for the LP-Gas industry.

Phillips To Expand LPG Delivery to Chicago Area

Proposed expansion of its product pipeline from Borger, Texas, to East Chicago, Ind., to alleviate the propane shortage in the Chicago and Great Lakes area, has been announced by Phillips Petroleum Co.

Construction calling for 500 miles of pipe between Borger and East Chicago will boost the line capacity by 30,000 barrels daily.

The Petroleum Administration for Defense has issued priorities for pipe deliveries in time to complete the line before the winter season sets in.

She attracts customers...

and this program sells them

1. This inviting, life-size, young lady attracts customers to your Perfection ranges . . .

2. Where counter displays, easel presentations, etc., urge them to rate the ranges they are considering. (We provide city and bottled gas "Rate Your Range" score sheets from the national advertising campaign.)

3. The customer adds the different range scores and finds . . .

You can't beat PERFECTION gas ranges! Specially engineered for L.P. gas

Take advantage of this new concept of "Rate Your Range" selling! Ask your Perfection representative about the display material, direct mailer, mat service, advertisement reprints and spec sheets. Or write direct.

Perfection Stove Company

7269-B Platt Avenue
Cleveland 4, Ohio

City or Bottled Gas Ranges

Associations

Michigan

By JAMES K. GILLAM

At the summer meeting of the Michigan LP-Gas Assn., June 21-22, held at Johnson's Rustic Lodge at Houghton Lake in Michigan, the group voted unanimously to join the state integration plan of the national Liquefied Petroleum Gas Assn. Michigan is the 20th state to so act.

President Bradley Price, of Pyrofax Gas Co., presided at the meeting. Addresses included one by Charles Gobrecht, Shell Oil Co., who pointed out the necessity of cleaning up installations and making the serviceman a good representative for his company in a talk entitled "Importance of Service in the LP-Gas Industry."

"Business Outlook" was discussed by Walter Naumer, vice president of Pyrofax Gas Co., New York. He stressed that during the present emergency the LP-Gas industry would be in a better position than during World War II due to increased recognition by both the public and the government. He predicted that the cost of propane would probably increase along with other operating costs and that dealers must tighten up their business practices now.

A discussion comparing gas and electric cooking was led by Ira Rapson, of the Michigan Consolidated Gas Co. M. A. Ennis, National Commit-

Landrum Hughes, of the A. O. Smith Corp., supervises the refueling of his airplane which has been converted to use with propane as some members of the Michigan LP-Gas Assn. inspect the conversion job. The A. O. Smith Corp. is now manufacturing the Hughes LP-Gas carburetor, with which this plane is equipped.

A group at the Mountain States convention (left to right): L. J. Wilmeth, W. M. Baum (Colorado), president, Denver; J. W. Martin, Shamrock Oil & Gas, and L. J. Farley, Eaton Metal Products Co., Denver.

tee for LP-Gas Promotion, titled his talk "Keep the Blue Flame Burning."

One of the highlights of the two-day meeting was the arrival of Landrum Hughes, of A. O. Smith Corp., flying his experimental plane operating on LP-Gas. Mr. Hughes led a discussion on tractor carburetion during the meeting.

The next meeting of the Michigan association will be in January, 1952.

Mountain States District

W. M. Baum, of the Red Dot LP-Gas Co., Denver, was elected president of the Colorado dealers at the June 10-12 annual convention and trade show of the Mountain States District, LPGA, at Troutdale - in - the - Pines, Colorado.

The convention program consisted of the following speakers and topics: "Carburetion Promotion," Robert Strawn, Jr.; "Colorado State Fair Program," H. T. Davisson; "This is Our Problem," Jack Stafford; National Promotional Program and "More for the Money," M. E. Ennis; "P.D.-C.R." by J. L. Wilmeth; "Just to You," R. B. McAlister; "Colorado LPGA Insurance," W. D. Sanborn and Walter Lindsay; "How to Increase Heating Sales," C. C. Owens.

The convention committee, assisted by J. C. Crawford, district secretary, was composed of Walt Parkins (chairman), J. L. Thompson, F. N. Mabee, and W. M. Baum, all of Colorado; Ben Clark, New Mexico, and Talmadge Lovejoy, Wyoming.

According to Mr. Crawford, the convention was the largest ever held, with approximately 240 registering

and probably 60 additional in attendance. Tours of the resort area were arranged for ladies in attendance. The convention closed with a banquet and dance.

Virginia

The annual convention of the Virginia Liquefied Petroleum Gas Assn., scheduled for Sept. 10-11 at the Roanoke hotel, Roanoke, will be presided over by Sam W. Goode, president of the group. Election of officers for 1951-1952 will be held the second day of the meeting.

SAM GOODE

Speakers at the two-day convention will include Charles W. Williams, Federal Reserve Bank, Richmond, Va.; Paul I. Berno, Tappan Stove Co., Mansfield, Ohio; Sol W. Weil, Geo. D. Roper Corp., William Johnson, Harper-Wyman Co., Chicago; and W. S. Lander, president, LPGA, Charlotte, N. C.

A friendship hour and banquet are planned for the first evening of the meeting. The ladies reception committee is composed of Mrs. Herbert Werner, Mrs. Ralph Fry, and Mrs. Ray Cassett.

Fifth LP-Gas Association Formed in Maine

An organization meeting of the Androscoggin-Oxford LP-Gas Assn. was recently held in the Elms Hotel in Auburn, Maine, for the purpose of forming an LP-Gas association for the counties of Androscoggin and Oxford.

The following officers were elected:

President—Al Lauziere, of D. & L Co., Lewiston.

Secretary—Laurier Raymond, of Raymond's Gas & Appliance Co., Lewiston.

Treasurer—Harold Goss of Goss Hardware Store, Mechanic Falls.

It was decided to hold the next meeting at the Elms hotel in Auburn, Sept. 26.

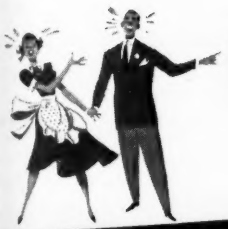
As there are approximately 32 LP-Gas dealers in the two counties, those present seemed to feel that a strong and active association could be maintained.

Larry Holman, vice president and director for Maine of the LPGA of New England, acted as chairman of this first meeting and outlined the reasons why local associations could be most helpful to those who are directly interested and the industry as a whole. He also pointed out that although no association had previously been formed in this area the dealers individually and collectively had been most active in civil defense and had made more progress along these lines than any other section of New England.

Maine now has a total of five local associations. In addition to the above they are The Aroostook LP-Gas Dealer's Assn.; Eastern Maine LP-Gas Assn.; Kennebec Valley LP-Gas Assn.; and the Cumberland & York Propane Assn.

Program Set Up for 2nd Western Service School

The schedule for the second annual Western LP-Gas service school, to be held at the University of California, Aug. 29-31, has been announced by the LPGA. The three-day course will be held in Agriculture Hall on the Berkeley campus. Co-sponsored by the LPGA and the division of engineering extension of the university, the school is under the chairmanship of



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TO HELP YOU SELL MORE AUTOMATIC GAS RANGES

HARDWICK EconoMatic pin-point pilot lighting

HARDWICK EconoMatic pilot lighting system reduces the size of the HARDWICK oven and top burner pilots to about ⅓ the usual size.

A COOLER RANGE. EconoMatic means a HARDWICK stays far cooler. It does not heat the kitchen in any weather.

FAR CHEAPER. High bill complaints are ended. Pilot fuel costs are reduced to pennies. Total pilot consumption with EconoMatic is actually less than former oven pilot cost alone.

HARDWICK — pioneer in offering finest gas range performance at sensible, merchandisable prices — now offers Automatic Gas Cooking at prices more customers can afford. You can offer HARDWICK EconoMatic at prices lower than many another non-Automatic stove. Push Automatic now — with EconoMatic. Write for full information, today.

Usual Oven Pilot Flame

HARDWICK Econo Matic

About ⅓ as large

A flame ⅓ as large for oven and top burner pilots, yet laboratory and field tests prove it equally dependable. Utilizes valves and controls you know, that have been proved on millions of ranges.

Eliminates Emergency Service Calls

A turn of a dial changes EconoMatic from Automatic to Manual operation. The customer may turn off the oven pilot, if she wishes. In case of oven pilot failure for any reason, your customer dials "M" and lights her oven with a match, until your serviceman arrives. Eliminates emergency service calls. Saves time and money for you. Builds customer good will.

HARDWICK STOVE COMPANY

Established 1879

CLEVELAND, TENNESSEE

● AGA Approved for LP, Natural and Manufactured Gases

Henry C. Haar, chairman of LPGA's District 2 educational committee.

Early registration is urged due to the limited enrollment of approximately 180 students. The fee is $15.

Lectures include servicing and operating of tank fittings, space heating, thermostats and pilot-generated controls, servicing refrigerators, electric controls, customer relations, venting appliances, engine fuel, and properties and characteristics of the fuel.

Geo. C. McLaren Named President, CNGA

The board of directors of the California Natural Gasoline Assn., at its annual meeting in Los Angeles recently, named Geo. C. McLaren, general superintendent of Southern District Natural Gasoline Department, Standard Oil Co. of California, to the presidency and Warren H. Kraft, director of Honolulu Oil Corp., to the vice presidency of the organization. E. R. Millett, Jr., was reappointed as secretary-treasurer.

Outgoing president R. S. Tulin, Shell Oil Co., presided over the business session and announced the results of the annual election of officers for the fiscal year of 1951-1952.

In addition to the past presidents who are ex-officio members, the following were appointed to serve on the executive committee: F. E. Bradley, C.C.M.O.; C. L. Case, Continental Oil Co.; R. C. Enderly, Wilmington Gasoline Co.; Fred Hartley, Union Oil Co. of California; Ray Hull, California Research Corp.; C. L. Hutchings, Tide Water Associated Oil Co.; E. W. Walker, Western Gulf Oil Co.; P. E. Foote, Petrolane, Ltd.; M. L. Fort, Pacific Lighting Gas Supply Co.; Grove Lawrence, Southern California Gas Co., and Winton J. Heinz, Ingersoll-Rand Co.

Idaho and Nevada Plan State LP-Gas Associations

The latest states to join the organization parade are Idaho and Nevada. Constitutional conventions are planned for the purpose of setting state associations in motion.

In Idaho, constitutional committeemen include O. M. Cox, L. V. Rothrock, and Chester and George Kaufman.

In Nevada, a similar committee is composed of Elmo Whitmore, Walter Dudley Jr., George Myers, Woodrow Erickson, Charles Harper and Bud Martin.

West Coast LPGA Members Meet in San Francisco

California LP-Gasmen gathered in San Francisco July 13 for a one-day meeting to hear discussions of current problems and inspect the Western summer market displays of a score of appliance manufacturers who have permanent LP-Gas exhibits in the Western Merchandise Mart.

BEN MARSH

Officially it was a meeting of LPGA Districts 1 and 2, but it drew from a wider area. It was under the direction of West Coast Secretary Ben Marsh, with the California Liquid Gas Dealers Assn. and the Pacific Coast Gas Assn. as hosts. Don McNary handled the introductions.

Included on the program were talks prepared by J. E. Brenton and Dan C. Perkins, of the California Bureau

of Weights and Measures; Mel Lewis, General Controls, on "New Thermostat Controls"; M. A. Ennis on national advertising and publicity; Robert Kranhold on "Better Customer Service Through Quick Communication," and Gordon H. Smith on the importance of associations to the LP-Gas industry.

Committee Heads Named By LPGA President Lander

Chairmen for 12 standing committees of the Liquefied Petroleum Gas Assn. for the ensuing year were appointed recently by W. S. Lander, newly elected president, as follows:

Appliance Specifications: D. D. Buttolph, Phillips Petroleum Co., Bartlesville, Okla.

Constitution and By-Laws: Lee A. Brand, Empire Stove Co., Belleville, Ill.

Convention: H. C. TenBrook, Ready-Flame, Inc., Kokomo, Ind.

Educational: Fred A. Rives, Automatic Gas Co. of Columbus, Columbus, Ga.

Finance: Mark Anton, Suburban Propane Gas Corp., Whippany, N. J.

Legislative: R. T. Goodwin, Shell Oil Co., New York.

LP-Gas Specifications: Paul Shannon, Standard Oil Co. of California, San Francisco.

Membership: A. C. Ferrell, A. C. Ferrell Butane Gas Co., Atchison, Kan.

Publicity and Advertising: M. L. Trotter, Carolina Butane Gas Co., Columbia, S. C.

Safety: Walter Hoagland, Fisher Governor Co., Westport, Conn.

Technical and Standards: Robert E. Poethig, The Bastian-Blessing Co., Chicago.

Transportation: George W. Bach, Skelly Oil Co., Kansas City, Mo.

CALENDAR

Aug. 5-6—Tennessee LP-Gas Assn. Convention. Andrew Jackson Hotel. Nashville.

Aug. 13-14—LP-Gas Engine Fuel School. Purdue University, Lafayette, Ind.

Aug. 20-21—Kentucky LP-Gas Assn. Convention and Trade Show. Seelbach Hotel. Louisville.

Aug. 21-23—Pacific Coast Gas Assn. Annual Convention. Fairmont Hotel, San Francisco.

Aug. 29-31 — Western LP-Gas Service School. U. of California, Berkeley.

Sept. 10-11—Virginia Liquefied Petroleum Gas Assn. Convention. Hotel Roanoke. Roanoke.

Sept. 10-11 — Eastern LP-Gas Service School. University of Bridgeport. Bridgeport, Conn.

Sept. 13-14—LPGA Board of Directors. Brown Palace Hotel, Denver.

Sept. 14-15—North and South Carolina LP-Gas Associations Joint Meeting. Ocean Forest Hotel. Myrtle Beach, S. C.

Sept. 22—National Butane-Propane Assn. District meeting. Bismarck Hotel. Chicago.

Sept. 26 — Androscoggin-Oxford LP-Gas Assn. Elms Hotel, Auburn, Maine.

Oct. 1-3—Assn. of Nebraska LP-Gas Dealers. Annual convention. Hotel Paxton, Omaha.

Oct. 4-5 — California Natural Gasoline Assn. Ambassador Hotel, Los Angeles.

Oct. 8-12—National Safety Congress. Chicago.

Oct. 11—New England LP-Gas Assn. Annual Fall Meeting. Hotel Statler, Boston.

Nov. 5-8—American Petroleum Institute. Annual Meeting. Waldorf-Astoria Hotel, New York.

Dec. 6-7—LPGA Board of Directors. Sheraton Hotel, St. Louis, Mo.

Arkansas Dealers Winning Fight To Increase Consumer Storage

By Craig Espy

NEWLY elected president of the Arkansas Butane Dealers Assn. is Joe McKim, LP-Gas & Equipment Co., Springdale, who took office at the June 10-12 annual convention and trade show of the organization in Little Rock. Attendance was estimated at 425.

Mr. McKim succeeds Amos David who presided at the meeting. In his address, Mr. David pointed out that the No. 1 project of the ABDA has been the fostering of a program to develop adequate storage for consumers. The program has been effective—61% of the systems sold in the state last year were of 375 gals. and up; a large percentage of this figure featured 500 and 1000-gal. systems; 39% of the systems sold were 250, 200, and 110 gals. Only 3% had been of the 110-gal. size, however.

A 1:1½ ratio was defined an adequate storage by the public relations committee headed by Cy Carney. That is, storage of 1 gal. in summer and 1½ gals. in winter for both dealer

Newly elected officers and directors of the Arkansas Butane Dealers Assn. (left to right, front row): A. R. Olsen, Joe McKim (president), Floyd A. Starnes, Harold Vise, Amos David. Back row: A. W. Porter, H. G. Elliott Sr., Russell T. Evans, Robert Remy, Jack Treece, Otis S. Cash. Not present: R. C. Weis.

and consumer. In his report, Mr. Carney pointed out that each dealer should have storage for 8 to 12 days' supply during cold weather months. If these recommendations were lived up to, shortages that had developed in the past would not occur again.

New Sales Approach

Dealers were warned that appliance shortages could develop by early fall due to curtailment of steel, brass, copper, and aluminum supplies, according to Jack Phillips, Geo. D. Roper Corp. Mr. Phillips also pointed to a new approach to selling the housewife by stressing the pleasure and economy of cooking and baking at home.

Ceiling price regulations, controls, and the present inflationary trend were discussed by Osher Goldsmith, from the Dallas office of the OPS. When the present expansion program is completed, steel capacity will be more than double that available before World War II, according to John M. Powell, Arkansas Foundry, who spoke on the "Outlook for Steel."

Leonard Warden, Sr., West Memphis dealer, told his listeners that a prospect should be made to feel the need for what the salesman is trying to sell. Other speakers and their subjects included: A. F. Browne and G. M. Kintz, Bureau of Mines, "Magic of Fire" (demonstration); Ralph G. Abbott, Ensign Carburetor Co., composite of tests expounding LP-Gas as a motor fuel; Forrest N. Hall, Chambers Range Co., cited records to prove that cooking with LP-Gas costs only a small fraction of the cost of other cooking fuels in a talk on "Gas vs Electricity"; Charlie Craig, of the Farmers' Insurance Exchange, pointed out that out of 400 units insured in Arkansas in the past 10 months, the loss ratio was less than 8%, in comparison to the 53% loss ratio over all kinds of insurance in the state.

A. W. Porter, executive secretary of the Arkansas association, arranged special entertainment for the convention. Duke Sweeney and Max Fetty, both of Delta Tank, were masters of ceremonies at a party and banquet, respectively. Distinguished Service were presented at the banquet to outgoing President David, Cy Carney, Jr., Dulun G. White, and Lee A. Brand, the only man from outside the state to receive the award.

Other officers elected in addition to Mr. McKim, include Arthur Olsen, Floyd Starnes, and Harold Vise, vice presidents. Chairman of regional directors and finance committee is Amos David. Directors include Otis Cash, Paul DeClerk, Bob Remy, Russell Evans, L. L. Rambo, Jack Treece, H. G. Elliott, Sr., and R. C. Weis.

Gas Industry Launches Gracious Living Campaign

"Gracious Living" is the theme of the mid-summer promotional campaign launched recently by the American Gas Association as the coordinated promotional plan for the entire gas industry. Backing the national advertising sponsored by the association and by manufacturers of gas appliances, two-color portfolios carrying promotion helps and sales suggestions will shortly be mailed to gas utility companies and dealers throughout the nation.

Gas house heating and gas refrigeration are highlighted as offering especially good sales opportunities during the summer months. The portfolio points out that summer is the time when most people are ready to install new house heating equipment. Manufacturers and dealers can avoid seasonal peaks and rush orders for heating equipment in the early fall months by campaigning now for installations.

New Texas Butane Assn. officers (left to right, front row): John Wolf, Gene Bumpus (president), William Lawson. Back row: Joe A. Farrar, Gus J. Moos, U. C. Roney, and J. H. Winton.

Texas Operators Gain Long Fight For LP-Gas Commission

GENE BUMPUS, Plainview, Texas, was elected president of the Texas Butane Dealers Assn. at the sixth annual convention and trade show and the first annual Southwestern Butane Exposition of the group held in Fort Worth, June 13-15. Newly elected vice presidents are U. C. Roney, John Wolf, Joe A. Farrar, and J. H. Winton.

Gus J. Moos and William J. Lawson, both of Austin, were re-elected secretary-treasurer and executive secretary, respectively.

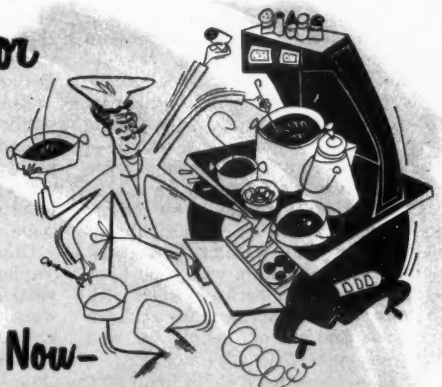
Almost 50 displays were in the exposition which were viewed by the 500 convention attendants.

C. D. Ribble, outgoing president of the TBDA, in his review of the industry's progress in the state during the past year, placed special emphasis on the creation of the LP-Gas Division of the Railroad Commission, providing a separate administrative section for the industry with a director, engineers, field men, inspectors, etc. The industry was formerly un-

By Craig Espy

As advertised in Time Magazine, August 13.

Extra hands for busy Chefs—



Now—automatic oven lighting

OPTIONAL ON ALL

Magic Chef

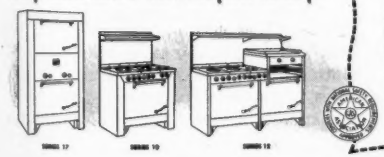
CAFE LINE

COMMERCIAL COOKING EQUIPMENT

no stretch—no stoop—no strain!

Now—no more fumbling for matches during rush hours! A flip of the valve, a turn of the regulator—you're "cooking with gas!" The new *Magic Chef* ovens, equipped with automatic oven lighting and automatic *100% safety shut-off*, completely eliminate lost motion. No gas waste either—busy chefs no longer have to leave idle ovens burning to save relighting bother. That means more efficiency—greater profits for restaurant operators. *Magic Chef* Cafe Line Commercial Cooking Equipment, available for use with city, "Pyrofax" or other bottled and tank gases, is in daily use by thousands of small restaurants, drive-ins, roadside inns, school cafeterias, small hotels, clubs & lodges, small hospitals, church kitchens, nursing homes, and other small institutions. If you are involved in the purchase of cooking equipment for any of the above, get the complete facts!

Clip and mail this coupon today!



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Without obligation, please furnish me with additional information about the following Magic Chef Cafe Line Commercial Cooking Equipment:

☐ GAS RANGES ☐ ROASTING and BAKING OVENS
☐ GRIDDLES-RADIANT BROILERS ☐ DEEP FAT FRYERS

Firm_____

Per_____

Street_____

City_____ State_____

(Use margin of page if necessary)

der the Gas Utilities Division. The sum of $42,000 was appropriated from butane dealers' license fees to help bear the cost of operating the department. The industry as a whole, it is felt, will benefit from the new LP-Gas Division, especially with the curtailment of present non-licensed operators who lack proper experience to make safe installations.

Other progressive moves by the association indicated by Mr. Ribble include a state fair exhibit, dissemination of information on wage and hour legislation, and cooperative work with the insurance department for revision and clarification of definitions and phraseology of insurance rules.

In 1948, there were three insurance companies in the state writing complete LP-Gas coverage, according to Ray Noblett, dealer-speaker from Clarendon. "Today," he said, "there are 58"—showing what can be accomplished through unity and harmony within the industry.

Wants More Safety Work

William J. Murray, member of the Texas Railroad Commission, told conventioneers in his talk entitled "Service—Safety—Supply," that the only criticism the public seems to have of the industry is the lack of adequate supply during times of extreme weather. But he also advocated more safety regulatory work, stressing the fact that successful safety programs always start with the individual.

A spontaneous ovation greeted William S. Fly, state representative from Victoria, when he was introduced to the group. As sponsor of the bill creating the LP-Gas Division, he spoke on "What the Legislature Did to You This Year." Among measures introduced was a bill to increase load limits, another making labor unions responsible for civil damages, a natural gas tax, and one requiring dealers to collect the taxes due on butane sold for motor fuel. Mr. Fly urged dealers to maintain close relationship with their representatives at Austin and to tell them what bills will help dealers and what will harm them.

Results of a survey to determine the public's reaction to LP-Gas were presented by Plasco G. Moore, state supervisor of distributive education of the Texas Education Agency. Survey results are digested elsewhere in this issue of BUTANE-PROPANE *News*.

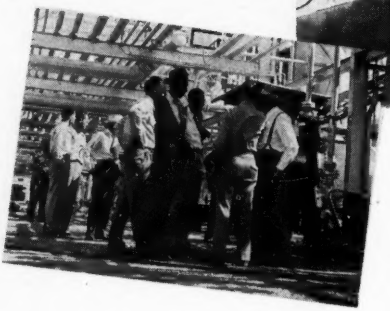
Other speakers included Jack B. Taylor, of Jack B. Taylor, Inc., advertising counsellor, whose subject was "The Reason We Advertise Today is Today." He stressed the advantages to be gained through the state-wide advertising campaign of the association.

New directors elected are as follows: District 1, W. M. Shattuck, Alta; District 3, H. O. McElveen, West Columbia; District 7, J. A. Farrar, Waco; District 9, Emmett Godfrey, Arlington; District 11, G. D. Fraley, Sweetwater; District 13, Glen Cope, La Mesa; District 15, T. B. Cox, Hart. Directors at large: Dillard Peek, Clarksville; H. P. Pittman, Bryan; U. C. Roney, Corsicana; and R. N. Burchard, Pecos.

Two UDI Officials Given Advancements

George Kelley has been appointed vice president in charge of sales for Utilities Distributors, Inc., of Portland, Maine. In announcing the appointment, Peter A. Anderson, president of the concern, states that the duties of the new officer will include administration of sales, sales promotion, and advertising policies.

Larry Holman was appointed promotion manager of UDI, assisting the sales promotion program and conducting special activities for the management.



Upper left: Resisting a good story told by H. W. Vossler, Richfield Oil Corp. (extreme right) are, from left to right, Don McNary, Calor Gas; W. A. Cook, Portland Gas & Coke; Robert E. Maloney, president of Calor, and William C. Ulett, of the same company. Lower Ulett, of the same company.

Left: The Calor Gas Co. group visits Richfield's new refinery at the Cuyama, Calif., oil field. It was part of Calor's fifth anniversary tour for its distributors and friends. Above: At the Santa Barbara Biltmore the banquet and entertainment was outstanding.

Flies High on Fifth Anniversary

FIVE years of development and expansion of its fuel services in seven Western states and British Columbia were celebrated in mid-July by the Calor Gas Co., San Francisco, when that firm was host to 100 of its distributors and friends at a unique celebration.

Representatives from all parts of its wide territory were taken by chartered planes from San Francisco to Santa Barbara, Calif., stopping en route at the rich, newly discovered Cuyama Valley oil fields where the refinery operations of the Richfield Oil Co. were inspected in detail. Calor obtains a large part of its fuel supplies from this geld.

From Cuyama the party was flown to Santa Barbara where it gathered

Garland Urges You to . . .

Keep the Ball Rolling

SUPPORT THE NATIONAL COMMITTEE FOR L-P GAS PROMOTION TODAY!

A total of *50*—yes 50—national, regional and state publications with a combined circulation of *34,500,000!* That is the kind of advertising which is building greater and greater acceptance for L-P gas across the country! It has already done a real selling job . . . *for you!*

But we need your help to make it even bigger . . . more effective! Our goal is to bring advertising pressure to bear on *every potential user of L-P gas.* If we all unite behind this vital progam we can make our dimes do the work of dollars!

Make your pledge now! Address NATIONAL COMMITTEE FOR L-P GAS PROMOTION, 11 S. LaSalle Street, Chicago, Ill.

MEMBER

Display This Seal Proudly

GARLAND

DETROIT-MICHIGAN STOVE CO.

Detroit 31, Michigan • • Fine Ranges Since 1864

at the Santa Barbara Biltmore hotel for a cocktail party, banquet and stage show.

On the following day the group was taken by plane for an aerial tour of many of California's most important oil fields and refineries, including Rio Bravo, Coles Levee, Kettlemen Hills, Coalinga Nose, and Burrel. Arrival at San Francisco's airport Thursday afternoon ended the tour.

The Calor five-year anniversary party highlights the rapid development of this LP-Gas marketing organization which has become, in this brief period, a major LP-Gas marketing organization in the West, recording another phenomenal story in a phenomenal industry.

Calor first began selling butane and propane from its small Oakland offices in 1946. Its supply then came largely from the General Petroleum Co. Today, the company also depends on four other producers—Richfield, Union, Superior, and Texas oil companies—for the LP-Gas they provide for contract distributors in all of the western states and several Canadian provinces.

Active head of this rapidly growing LP-Gas marketing organization is Robert Maloney, president. Fairly new to the industry, Bob Maloney has done much in building Calor's marketing organization. Other men now taking active parts in the activities of the company include William Ulett, assistant to the president, and Don McNary in charge of development services.

Carolina Butane Opens Branch Office at Dillon, S.C.

The Carolina Butane Gas Co. has opened a branch office in Dillon, S.C., with headquarters on Main Street.

M. L. Trotter, of Columbia, is president of the company and M. H. Huckabee of Conway is district manager in charge of that area. The local office will be in charge of John D. Gordon, formerly connected with the Florence branch.

Clifford McCormick, of Dillon, for many years affiliated with local business, is in charge of sales.

Warren Petroleum Corp. Starts Inquiry on Bulk Plant Fire

Intensive efforts are being made to determine the cause of the July 7 fire which resulted in the destruction of 70 30,000-gal. LP-Gas storage vessels at the Newark, N.J., bulk plant of the Warren Maritime Petroleum Co., subsidiary of Warren Petroleum Corp., of Tulsa.

The company, itself, was the first organization to start investigations with the appointment of H. Emerson Thomas, of Westfield, N.J., to lead a group of technical experts, in cooperation with Warren engineers, who will make an exhaustive inquiry. Other groups include city and state fire authorities, insurance underwriters, and the Federal Bureau of Investigation. While sabotage is not believed to have been present, its possibility will be considered.

In a public statement by W. K. Warren, president of the corporation, the LP-Gas industry was promised complete information on the findings of investigators to the end that any technical facts revealed can be made a guide in similar installations.

According to reports made by George Krueger, deputy director of the New Jersey Department of Labor and Industry which, with state police, is responsible for safety factors in the storage of propane and other gases, the installation of the huge tanks was well in compliance with codes and requirements, was as safe as any in the country from an engineering standpoint, and had underwriters' approval.

Now! **AFTER TWO YEARS RESEARCH AND TESTING**

The NEW *Blu-blaze*

STOCK TANK HEATER

BETTER BECAUSE . . .

Research on stock tank heating proved that efficiency varies greatly with wind conditions. We therefore developed the BLU-BLAZE Draft Cap which controls the effect of wind or draft. Next, we included all the service features requested by customers who helped in our field testing.

(To Install—Just lower heater into tank and connect with gas line as shown above.)

(Model 950-A)

FEATURES

- Self-sinking — cast iron construction
- BLU-BLAZE Draft Caps eliminate draft troubles and keep efficiency high
- Drilled port, cast iron, Venturi Type Burner
- Leak-proof, weather-proof construction
- Burner installed and adjusted at the factory
- Operates at varying input from 6000 BTU to 18,000 BTU/hr. with *automatic controls optional*

TESCO *Incorporated*

Also Manufacturers of BLU-BLAZE Space Heaters, Draft Caps, and Gas Plates

110 S. Norfolk . . . Tulsa, Okla.

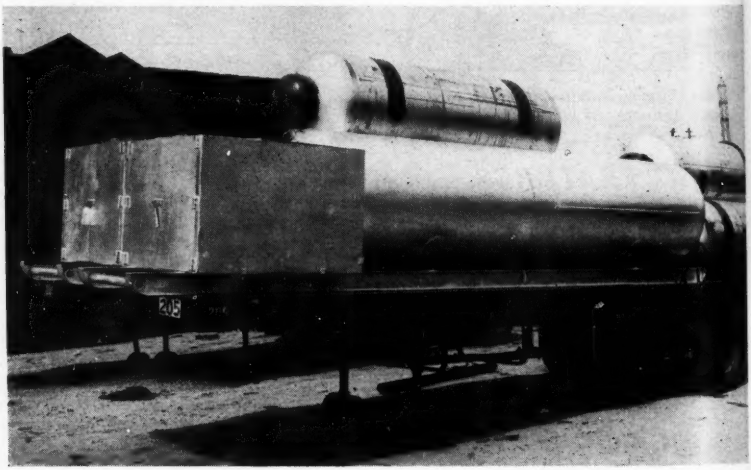
Desert Arabs Will Cook With LP-Gas

LIQUEFIED petroleum gas, hitherto a wasted by-product of the refineries of the huge Arabian-American Oil Co. in Saudi Arabia is slated to become that country's chief source of cooking fuel if present plans work out.

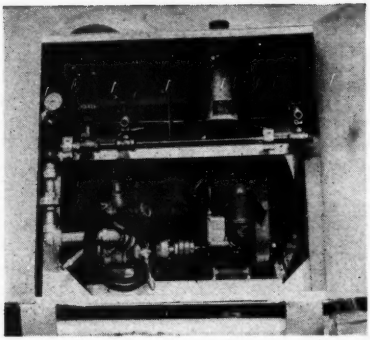
According to officials of the American Pipe & Steel Corp., Alhambra, Calif., LP-Gas may help the people of Saudi Arabia achieve a higher standard of living. Their king, Ibn Saud, recently asked the Arabian-American Oil Co. to supply advisors to aid him develop a new economy for his country. After much study, the advisors found that many steps could be taken to start farms, create new industry and otherwise benefit the poverty-ridden Arabs.

One of the discoveries made by the advisors was that the increased population had created a scarcity of the traditional Arab cooking fuel, camel dung. The advisors recommended that the wasted LP-Gas be utilized for cooking purposes, and outlined how this operation could best be set up. They have given their report to the government which, in turn, has encouraged private individuals in the liquid petroleum gas business to set up the operation as it now exists.

The problems of transportation and storage of the gas are being solved by the designers and engineers of the American Pipe & Steel Corp. who are providing complete storage, pump-



Ready for ocean shipment, this American Pipe & Steel LP-Gas pumping unit is to be used on stationary and portable tanks in Saudi Arabia. Heavy metal cases protect the controls from sand storms and theft.



Closeup of the American Pipe & Steel pumping unit which can pump LP-Gas from several stationary tanks at one time. It can also be used with portable tanks mounted on trucks.

ing and dispensing units which can be hauled by truck to any part of Saudi Arabia. The first shipment is now en route.

The method of proposed operation is this. A complete dispensing unit, including an 1144-gallon tank, pump, hose and connections, will be hauled to a site near population concentrations. It can be placed on a frame or concrete pedestal. The dispensing unit, which is also a storage tank, can have its capacity increased by the addition of more tanks, which are manifolded to it. One pump serves all tanks in the dispensing unit. Since the entire design calls for mobility, the dispensing units can be located several hundred miles from a refinery. A delivery truck, fitted with another tank designed by American Pipe & Steel, will refill each dispensing unit as the need arises.

Another interesting aspect of the development of LP-Gas in Saudi Arabia is that the Arabs are principally mutton eaters. Several families eat from one giant cooking pot, in which there may be six or seven sheep, garnished with vegetables. Because of the large capacity of the vessel, the king's advisors and the LP-Gas companies have developed special burners to heat the exceedingly large pot.

If the project goes according to plan, the American Pipe & Steel Corp., working in conjunction with the Arabian-American Oil Co. and King Ibn Saud, will be playing an important role in the development of an oil-rich country, thousands of miles from the sources of equipment.

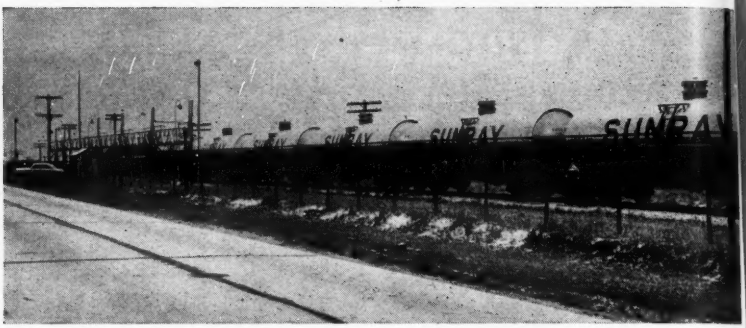
GAMA Protesting PAD's Proposed House-Heating Ban

Housing, heating, and allied industries have joined the Gas Appliance Manufacturers Assn. in protesting to the Petroleum Administration for Defense the proposed government move to regulate supplies of natural gas for house-heating.

H. Leigh Whitelaw, GAMA managing director, in a letter to C. P. Rather, assistant deputy administrator of PAD, has pointed out that such an order would "ruin a great many companies, large and small, employing thousands of people dependent upon the public's use of available gas supplies."

He said further that "the problem . . . can be solved by use of existing procedures. Where restrictions (in the use of gas) have been necessary, the public service commissions of the different states have customarily issued restricting orders pertaining to the use of gas. For this reason, our members feel very strongly that any limitation order on a national basis is unnecessary. . . ."

The GAMA protest expressed the belief that a preliminary conference of the Gas Industry Advisory Council and the PAD "will establish the fact that restrictive measures are against the public interest."



First tank cars of LP-Gas out of Sunray's Snyder, Texas new gasoline plant.

Sunray Oil Receives Big Tank Car Shipment

The delivery of 200 newly purchased liquefied petroleum gas tank cars and 100 new cars to be operated by them on a lease basis was scheduled to be made to Sunray Oil Corp. refineries and gas-gasoline plants in the Southwest by mid-June.

Approximately 100 of the new cars are already in service at Sunray's plants in Oklahoma, Arkansas, Louisiana and Texas, and the remaining cars are being shipped from the Milton, Pa., factory at the rate of 10 cars each working day.

Sunray's new high pressure cars are each 11,000-gallon capacity. The acquisition will give the company shipping control over its growing volume of products from its Earlsboro, Okla.; Midway, Ark.; Benton and West Tepetate, La., and its Texas field production units.

Initial shipments of LP-Gas products were made during June from the new Snyder gasoline plant in Scurry county, Texas, according to an announcement by H. W. Manley, vice president of Sunray Oil Corp., builders and operators of the plant for 30 companies and 60 individual co-owners.

Production of between 50 to 60 carloads daily (450,000 gals.) is expected. Products being manufactured include propane, butane, isobutane, and natural gasoline. Full plant facilities were expected to be operating in July.

Steel Shortage Retards LP-Gas Growth in Scotland

A scarcity of equipment which may limit the continuing expansion of the LP-Gas industry in Scotland is reported. Gas and cylinders are in plentiful supply but the shortage of steel and the consequent reduction in production of ranges and heaters is beginning to be felt.

Service to existing customers by LP-Gas dealers will not be affected by the shortage but further expansion will definitely be held back until the production of steel improves and that, in turn, depends on the scrap supply situation, with no early improvement anticipated.

Products

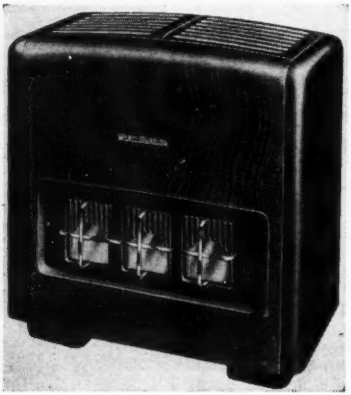
Gas Heater

Locke Stove Co., 114 W. 11th St., Kansas City 6, Mo.

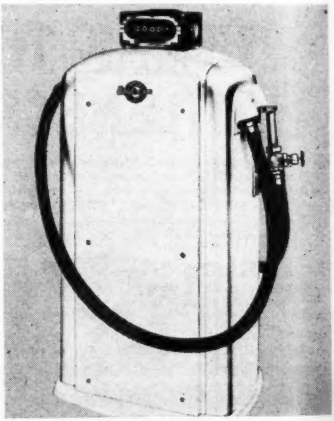
Model: Warm Morning 330 Series.

Description: Fully porcelain enameled with radiant glass fronts, this circulator-type line is rated at 30,000 Btu input for all gases. It is available in three models, identical except for control equipment: Model 330-RU is equipped with Robertshaw-Grayson "Unitrol"; 330-RB has a Baso 100% safety pilot; 330R has a constant pilot.

AGA-approved, the console-type heater has a radiant front formed of specially molded panels of fire resistant glass set in porcelain enameled, cast iron frame. The "inclined convector tube," running diagonally through the combustion chamber, serves as a passageway for the movement of heated air from the rear of the heater cabinet to the front and acts as an additional baffle. A double-section, center-entry, cast iron burner has extra deep, precision drilled ports to insure proper blending of gas and air for efficient combustion.



Warm Morning heater.



Texoil dispenser

LP-Gas Dispenser

Texoil Equipment, Inc., 1816 Cockrell St., Dallas.

Model: Texoil.

Application: A field-tested dispensing unit for fleet, wholesale, or industrial installations, for trucks, buses, and passenger cars.

Description: Capacity is 30 gpm maximum; 5 gpm minimum. Maximum working pressure is 250 psi.

It is equipped with differential valve and vapor release. A Neptune meter is utilized. The dispenser measures 25¼ in. wide at the base by 19 in. deep. Overall height is slightly over 50 in.

Equipped with an excess flow valve set at 150% of meter capacity, shut-off in case of accident is assured. It is equipped with explosion-proof, UL-approved station control switch for starting pump. Twelve feet of ¾-in. LP-Gas hose with connections are supplied.

The pump can be furnished if desired or present plant pump can be used.

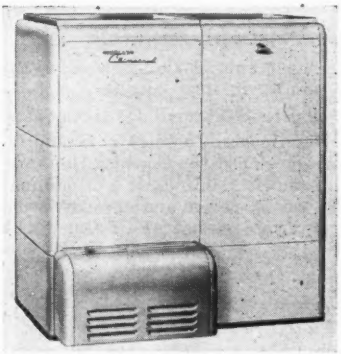
Domestic Range

Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio.

Model: 939.

Description: A 36-in. model, this new range has a one-piece, divided, turret-type cooking top with cast-iron grates and two giant and two standard Harper center-simmer burners. The banquet-size oven, with automatic heat control, has non-tilt racks and a window in the door. A special smokeless grid and pan finished in speckled-blue porcelain enamel feature the waist-high, drawer-type broiler. A convenient storage drawer is below the broiler.

Perfection range.



Climatrol low-boy.

Winter Air Conditioner

L. J. Mueller Furnace Co., 2005 W. Oklahoma Ave., Milwaukee 15.

Model: Climatrol Type 112 (Low Boy).

Application: Basement installation in new and modernized homes.

Description: Available in 90,000 and 110,000 Btu inputs, the new unit features a compact size, 51 in. high, 26½ in. deep, 44⅝ in. wide. Factory-assembled on a solid steel base, Type 112 has a heavy, welded-steel cylindrical heat exchanger with wrap-around radiator which is attached to the heat exchanger at the front only. Flue draft travel is completely updraft.

To insure quiet operation, the unit is equipped with a 13-in. blower which may be run at slower speeds without loss. Two 2-in. thick, white spun-glass filters are standard equipment. The corrosion resistant casing is lined with corrugated asbestos in-

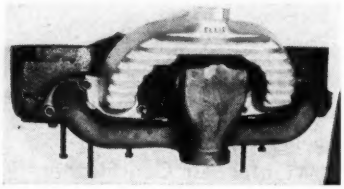
sulation backed with aluminum foil, serving the dual purpose of keeping the cabinet cool by reflecting heat into the air system, providing quieter operation.

Cold Manifold

Ellis Manifold Co., 2212 E. Washington Blvd., Los Angeles.

Model: M-Farmall.

Description: This new cold manifold was developed for use with the Farmall exhaust manifold. It will eliminate the loss of power and economy which arise from the use of LP-Gas fuel in



Ellis cold manifold.

a hot manifold built originally for low-grade fuels.

As illustrated in the photograph, intake portion of the old manifold is cut away to make room for the LP-Gas intake manifold. This operation is simple and can be accomplished quickly.

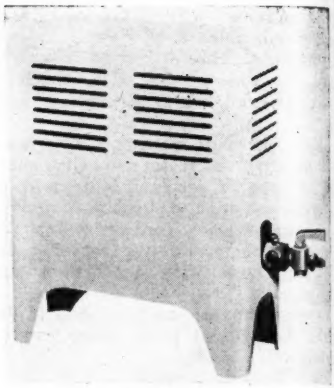
Small-Room Heater

Armstrong Products Co., Huntington 42, W. Va.

Model: 9D.

Application: For installation in bathrooms, nurseries, and other small rooms.

Description: The heater, occupying space a little more than 9 in. wide, 5 in. deep, and 13 in. high, is rated at 8000 Btu. Proper flame characteristics are easy to obtain through the



Armstrong heater.

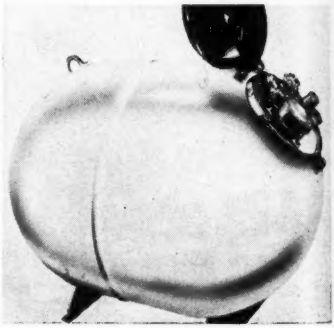
air regulator. A "sheet of flame" burner ignites rapidly and produces an even flame. It is held in place with a single screw. The heater is finished in white enamel.

Cylinder

Anco Manufacturing & Supply Co., 217 E. Archer, Tulsa, Okla.

Model: Anco Pig.

Application: Built to ICC 4BA240 specifications, the new light-weight



Anco cylinder.

cylinder is specifically designed for restaurant, motel, light - domestic loads, and tractor refueling installations.

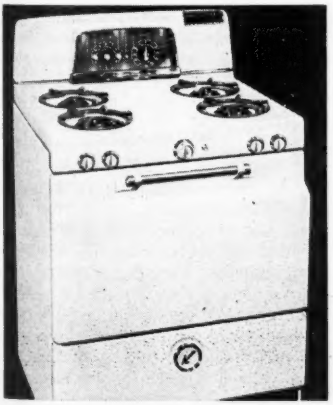
Description: Fittings include a Fisher regulator; Rochester visual liquid level gauge; filler, vapor, safety relief, and houseline valves; and outage gauge. The cylinder is also available as a completely fitted unit with liquid withdrawal for tractor refueling. Mounted on a pickup or trailer, it is permissible under ICC regulations to transport over the highway with gas in the "pig" cylinder from the bulk plant to the farm or ranch field.

Domestic Range

Kalamazoo Stove & Furnace Co., Kalamazoo, Mich.

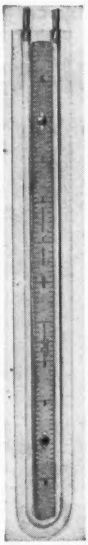
Model: Golden Jubilee.

Description: Outstanding features of the new 30-in. range are full width oven, removable glass-bottom broiler with automatic oven control and minute-minder, and Golden-Glass oven handle with cook chart dial. The broiler, claimed to be smokeless, has a drip pan for draining off grease. The Glow-Light panel illuminates the work surface when light from a fluorescent lamp passes through a photosensitive glass panel, and louvers inside the glass diffuse the light. A complete cooking chart is printed on the inside of the heat-tempered glass tube which is the oven handle.



Kalamazoo range.

Plastic Manometer



Plastic Engineering Co., 3128 E. Admiral Pl., Tulsa, Okla.

Application: Especially designed for gas servicemen, the manometer is for pressure - vacuum or differential reading.

Description: The manometer has white scales in 4-, 6-, 8-, and 10-in. It features an instant adjustable scale. Testing regulator pressure, static pressure fan and blower test, and resistance through filter are some of the applications. It is made of clear plexiglas of one-piece construction. Four sizes are available ranging in length from 11¼ to 23¼ in.

Breather Vent

Universal Controls Corp., 731 W. Davis St., Dallas.

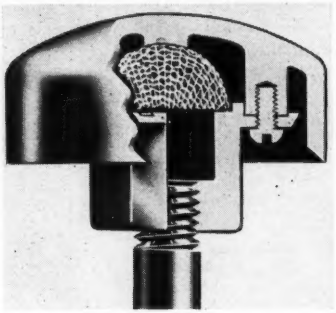
Model: Type 600.

Application: Designed for installa-

tion on regulators having diaphragms in a horizontal plane.

Description: Vent connections on the top (or spring case) side of the regulator are provided with female pipe threads, with the tapped opening in a vertical position. Available in ½-in. or ¼-in. pipe sizes, the vent is made of a weather-resistant aluminum alloy die casting and is comprised of two sections joined by three screws. Universal recommends installation with the vent on top of a 3-in. nipple to avoid water splash.

Universal breather vents are designed with a hood, or "umbrella," shielding the vent opening from rain, sleet, snow, and ice; a thin-edged lower hood-rim which sheds water; and a protected opening sized to keep out insects while permitting free and unrestricted flow of air or gas.



Universal vent.

Product Information

To combat the claims of a competitive cooking fuel, especially as related to cleanliness, **Caloric Stove Corp.**, Philadelphia, has designed and built a portable demonstration unit that shows what happens in a gas range broiler.

The unit, available to dealers for use on retail sales floors and at local exhibits and fairs, is a porcelain-enameled cabinet 18 in. long, 10 in. deep, and 12 in. high, vented at the top and with a glass window for viewing the action in the broiler.

Caloric broiler.

Ordinary incense is burned on a tray beneath the gas burner, vapors rising through the vent. When the burner is turned on, the flame immediately consumes the vapors, graphically demonstrating what can be deposited on kitchen walls and cabinets when there is no live flame to consume the products naturally given off by broiled foods.

Catalogs

A new, 30-page bulletin, No. 1083, covering aluminum and cast iron case domestic meters for measuring LP-Gases, manufactured gas, and natural gas, has been issued by the Rockwell Manufacturing Co. Domestic meters in capacities from 150 to 415 cu. ft. per hour at .60 specific gravity of gas are described. More than 50 illustrations of Rockwell meters with exploded views and internal assembly photographs are contained. Complete engineering data are listed for meters

and accessories along with specifications and dimensional drawings.

Industrial Meter Bulletin No. OG400, also issued by Rockwell, is a guide to the proper selection of meters for measuring more than 200 liquids with varying corrosive characteristics. In addition to a complete table of metered liquids matched with case, chamber and piston specifications, the bulletin includes a simplified sheet for customer selection.

For copies of these bulletins write to Rockwell at 400 N. Lexington Ave., Pittsburgh 8, Pa.

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Vulcan Diaphragms

A new illustrated brochure has just been released by Vulcan Rubber Products, Inc., Brooklyn, N.Y., detailing properties and designs of a wide range of synthetic coated diaphragms for all types of gas meters.

The company has also released a second illustrated folder describing molded diaphragms for use in all types of regulators, governors and controls which have a wide range of applications requiring diaphragm-actuated equipment.

Hartwell Catalog

A new catalog featuring the complete line of flush latches and hinges designed and manufactured by the Hartwell Co. has just been issued by that company. The latches and hinges described have a variety of uses for all types of modern, functional designs. The catalog, containing a section devoted to technical assembly information, is available by writing Hartwell at 9035 Venice Blvd., Los Angeles 34.

New Mexico Firm Continues Expansion

The Navajo LP-Gas Co., of Albuquerque, N.M., has purchased the business and equipment of the Albuquerque Butane Co.

Navajo LP-Gas purchased the Navajo Butane Co. in December, 1950, and has since erected new offices and showrooms at 5018 N. 2nd St.

Officers of the Navajo company are E. C. St. Cyr, president; William E. Kepler, vice president; and John F. Tonella, secretary-treasurer.

A mobile showroom for showing gas appliances, this display trailer was designed and built by Green's Fuel, Inc., Sarasota, Fla. Distributors of this company in North and South Carolina, Georgia, and Florida take turns using this trailer in their respective territories.

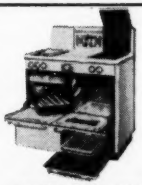
ODIN Beautyrange® NEWS

SPECIAL! for LP APPLIANCE BUYERS

ERIE, PA. . . . HERE'S A SPECIAL RANGE—FOR YOU—MR. LP APPLIANCE BUYER—ODIN'S NEW MODEL 104 WITH ALL THE FEATURES THAT HAVE MADE THE *Beautyrange*® LINE YOUR PROFIT LINE SINCE THE EARLIEST DAYS OF THE LP BUSINESS!

DELUXE MODEL *A1107

MODEL #104



DELUXE MODEL *A1302

DELUXE MODEL *A3105

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Storage to be Doubled By Joplin Butane Co.

Construction of additional storage facilities, eventually to total one-half million gals. and to double the present storage capacity, was planned for July 1 completion by the Joplin Butane Co., of Joplin, Mo. Representing an investment of $75,000 to $100,000, according to Monte Taylor, general manager, the new storage will consist of four 30,000-gal. tanks, with an additional tank installation planned for each year.

MONTE TAYLOR

A compressor house, unloading dock, small tank storage space, and a railroad spur to serve the plant are also planned. The present plant and office of the company at B & Main Sts. in Joplin will be retained as headquarters for operations.

Mr. Taylor reports that the company expects to have an adequate reserve supply of LP-Gas for the next winter so that there will be no shortage for the customers served in Joplin Butane's 50-mile territory.

Suburban Propane Will Sell Anhydrous Ammonia in East

Suburban Propane Gas Corp., Whippany, N. J., has begun large scale marketing of anhydrous ammonia in three states on the Eastern Seaboard, following a year of investigation and experimentation with the gas fertilizer.

Mark Anton, president of Suburban, announces that three bulk plants have been established for the nitrogen-rich fertilizer at Keller, Va.; Delmar, Md. and Berlin, N. J. The company has retained Dr. W. B. Andrews, Mississippi State College agronomist and an expert on agricultural ammonia, to guide its investigations.

The concern's agricultural division began operations in the latter part of April at the three locations. Each plant will serve an area about 40 miles in radius. Equipment is on hand which incorporates anhydrous ammonia tanks of 500 gal. capacity, injector knives, and nitro-shooters for introduction of the chemical into the soil.

Old-Time Town Plant Changes To Cylinder Distribution

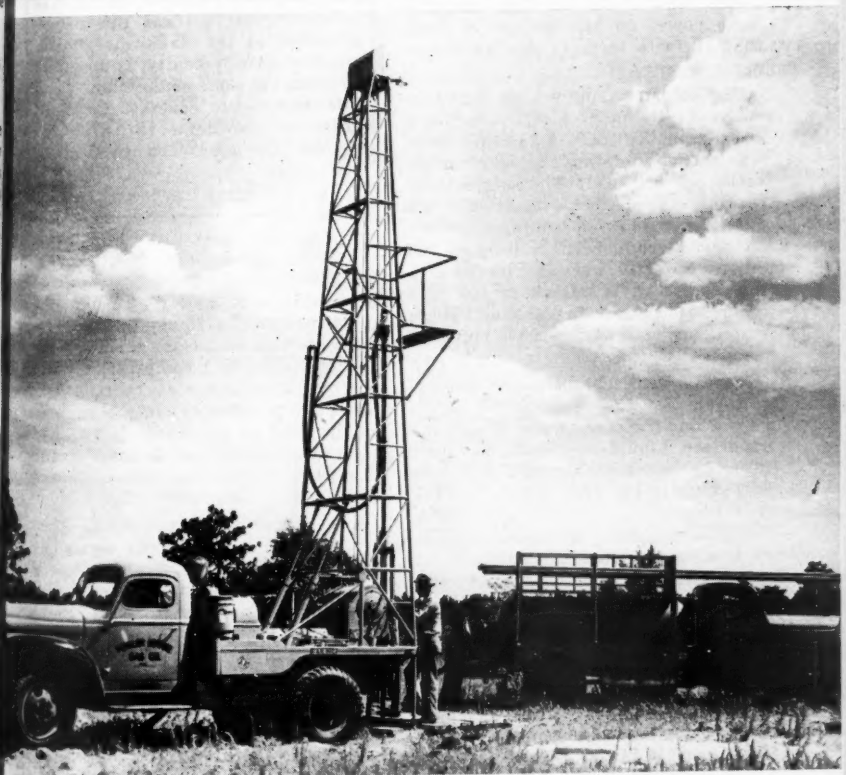
A change in the ownership of the Citizens Gas Co., of St. Stephen, New Brunswick, and Calais, Maine, has been announced. The company has been purchased by the Dead River Oil Co., of Calais, and the new owner will supply the customers with bottled propane gas, instead of piped propane gas. Permission to make the changeover has been granted by the state Public Utilities Commission, and the work is expected to be completed within three months. Included in the assets of the company are some 12 miles of pipe in St. Stephen and Calais.

The Citizens Gas firm was organized in the middle 1800's and the present gas mains were laid in 1859. Originally the company produced gas from coal but in 1928 this was changed to butane gas. The switch to propane was made in 1948.

Besides supplying bottled gas for both heating and cooking purposes, the company will also sell gas appliances. Present employes of the Citizens Gas Co. will be retained by the Dead River Oil Co.

BUTANE-PROPANE POWER SECTION

nstallations CARBURETION Conversions



Waterwell drilling with butane by Fowler Butane Gas Co. in Mississippi. (See P. 57.)

LP-Gas Engine Performance Tests Will Help Dealers Sell Conversions

By Ralph G. Abbott
Southeastern Division Engineer,
Ensign Carburetor Co., McKinney, Texas

Much has been written on LP-Gas as an engine fuel and this paper, delivered at the Arkansas Butane Dealers Assn. recently, is an effort to assemble some of the many tests into composite, concrete form in order to provide a yardstick for dealers to use when talking to customers.

LET US see how past experience shapes up with the general statements that "with LP-Gas one gets more power on less gallons of fuel; that oil lasts forever; and an engine never wears out."

The accompanying curves were taken from tests made on a popular farm size engine. To start, a gasoline curve was run at the standard compression ration of 5.4 to 1. The engine was tuned to its peak performance and the gasoline carburetor was checked for factory recommended calibration. In other words, this curve is the top performance of this engine at 5.4 to 1 compression ratio on gasoline. These results are used as the 100% point.

Next, an LP-Gas carburetor with economizer was installed, with the correct venturi to give maximum horsepower, and the correct size of LP-Gas vaporizer. Liquid re-drawal was used to make positive that dry gas only was going to the carburetor. Wet gas would naturally throw the mixture richer. The carburetor was adjusted to an analyzer reading of 13.0 to 1 for power and 14.5 to 1 for part throttle economy. Both readings were on a butane-propane scale.

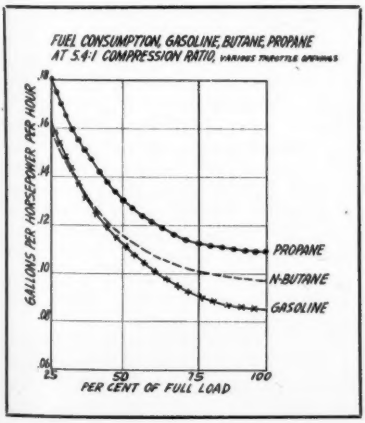
A curve was run on straight normal butane and straight propane. The commercial mixtures would show results between these two lines. These two curves at 5.4 to 1 compression ratio show what can be expected by just installing a carburetor. Note we have a slight loss of power and use 13% more gallons of normal butane or 31% more gallons of propane than gasoline at the 5.4 to 1 compression ratio. One thing of interest here is that there is less difference in gallons used as the load is lightened. It required 13% more gallons of butane at full throttle while the fuel consumption at ¼ load was about the same.

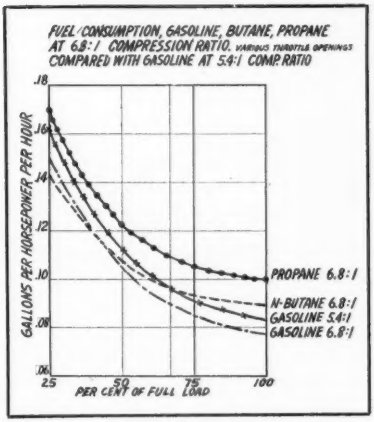
The compression ratio was then raised to 6.8 to 1 and once again the gasoline carburetor was calibrated for peak performance and a curve run. This compression gave 10% more power on 93% as much gasoline as gasoline did at 5.4 to 1 compression ratio. This was the top compression ratio for gasoline even though the highest octane fuel obtainable from service stations was used. There was an audible knock at full throttle.

The gasoline carburetor was removed and LP-Gas equipment was installed. No other changes were made except the spark was reset for maximum horsepower at full throttle. These curves labeled 6.8:1 n-butane and 6.8:1 propane show the results. The horsepower became just under and just over gasoline horsepower, 111% and 109% respectively. The gallons per horsepower-hour are still greater than either gasoline curves until ⅜ load, then n-butane used less gallons of fuel.

Next, the compression ratio was raised to the point of audible knock on n-butane which was 8:1 compression ratio. At 8:1 compression ratio, and here a cold manifold was installed, the power was 118%. The gallons per horsepower-hour at full throttle was 91% and only 75% as much fuel was used at ¼ load.

The maximum compression ratio used for propane was 9:1 because above this ratio the ability to fill the cylinder fell off as fast as the ratio was increased so that the resulting horsepower remained the same. One





of these days an engine manufacturer will design an engine for the 12:1 or 13:1 compression ratio that propane apparently will stand and then astounding results will be obtained. At the 9:1 compression ratio and cold manifold and maximum power spark setting, an 18% increase of power was obtained, the same as n-butane at 8:1. The gallons used were 96% of gasoline at 5.4:1, or a little more used than gasoline at 6.8:1. From ¾ load on down, less gallons of propane were used than gasoline at either compression ratios.

These tests definitely show the need for the maximum permissible compression ratio, cold manifolds, cold spark plugs and proper size venturi.

As there is nothing present to dilute the oil, it can be used considerably longer. Unfortunately, many people judge the quality of oil by color. All oils have coloring added to give them that golden look. When good oil filters are used, as most engines have, this coloring will be filtered out and the oil will assume the color of the crude oil from which it was made.

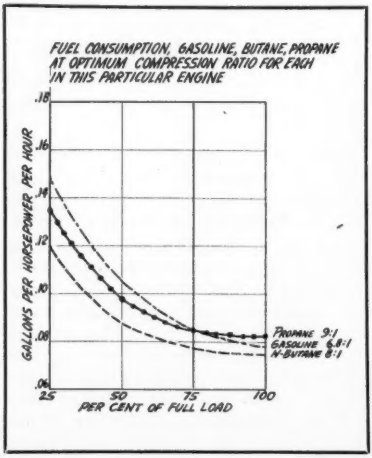
Some makes of oil will lose their color in as low as 750 miles, or 18 hours of operation.

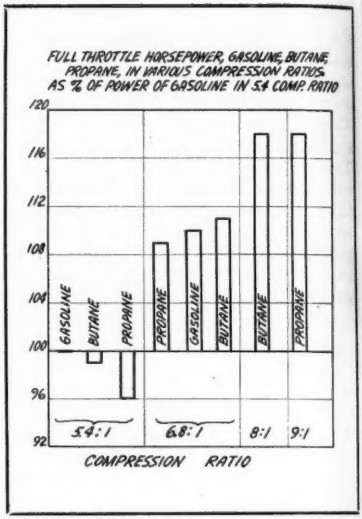
One bus company, who changes oil on laboratory analyses only, found its oil turning very black in 1200 miles and yet, after 32,000 miles of operation, the laboratory reported the oil as good as new as far as lubricating value was concerned. It had thickened but still was less than 10 SAE numbers heavier. They changed filter cartridges as the engine manufacturer specified, which was at 8000 mile intervals.

One tractor manufacturer recommends changing oil at 150-hour intervals on LP-Gas instead of every 60 hours on gasoline or every 40 hours on fuel oil.

Every check with users indicated that the interval between oil changes could be lengthened out two or three times the change cycle on gasoline.

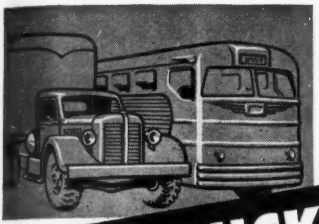
When new engines are started off on LP-Gas many manufacturers recommend using a straight mineral base oil rather than a detergent oil.





The type of service to which the engine is subject determines the change interval to a large extent. An engine subjected to frequent stops and starts will develop more under-piston condensate which mixes with the oil to form sludge, which should be drained off. An engine that runs up to 170° to 190° water temperature all the time has less tendency to sludge. As LP-Gas is used only in the dry state when admitted to the carburetor, there is no cylinder wash and oil dilution. This greatly reduces the multiplication of sludge formation. Therefore, sludge formation on an LP-Gas engine can be eliminated by merely running the engine up to temperature. This has been proven on several milk and bread delivery trucks after converting to LP-Gas by using 180° themostats.

Authoritative records of increased engine life, or the actual time between overhauls, have been hard to obtain. All users of LP-Gas engines say they



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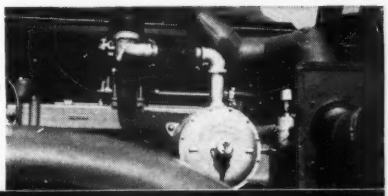
Typical truck installation of Century carburetor equipment



CARBURETORS for LP-Gas

definitely run longer between overhauls. One tractor dealer, who was preventive-maintenance minded, sold his farm customers years ago on the idea of grinding valves and engine checking each year. This dealer reported that LP-Gas tractors go two and three seasons between valve jobs. This same dealer reported his customers usually required ring jobs every other year and on LP-Gas these tractors would require re-ringing only every third year and sometimes every fourth year.

City transit companies keep very meticulous operational records. Those companies from whom records are available have not run far enough yet but we can report that one operation has passed the mileage at which a gasoline bus would require a valve grinding job. On this property the bus converted first showed compression pressure readings, after 75,000 miles of operation, within 20 lbs. of original compression pressure. This is a loss of 8% compression pressure in 75,000 miles.

We might give you a picture of this typical bus operation on the street. The stops are every block, or 330 feet apart. A recording instrument showed 40% of the cycle time was idling, loading or unloading, and waiting for traffic lights, 30% of the cycle was full throttle acceleration, 20% was in part throttle operation, and 10% of the time cycle was stopping. This operation covered 247 miles per day, or 1729 miles per week, and with time out for service and preventive maintenance inspections about 85,000 miles per year. The above buses make 1,360,000 starts and stops.

From all information obtainable, it is a conservative estimate that LP-Gas will prolong the life of any engine properly equipped at least 50% longer, and in some cases, 100%, in comparison with gasoline.

Propane May Have Disadvantages— But Wichita Buses Can't Find Them

WHEN JOHN E. EBINGER, vice president and general manager of the Wichita (Kansas) Transportation Corp., addressed the American Petroleum Institute convention in May, he recorded the experience of his company with propane passenger buses that places propane in a highly advantageous light.

Comparisons with gasoline and diesel engines and actual operating experiences with LP-Gas have convinced the company that it has adopted the most efficient and economical fuel for bus operation.

•

WE operate 100 passenger buses in Wichita with approximately 84 of them converted over to propane and, I might add, that all 84 happen to be Twin Coach buses, and all of postwar construction.

We have not undertaken to try to convert some of the prewar units that we are still operating. We don't think it is economically feasible. However, in making the decision to use propane, we realized we are in the territory where the fuel is produced and that the haul as far as transportation was concerned is the shortest and, naturally, any benefit costwise would accrue to us.

Before we decided to use propane in our motor buses, we recognized that the diesel engine had to be considered from the standpoint of economy and cost. We explored the diesel situation the country over and we discovered one striking point with which I am not too sure you are acquainted. Of all the diesel operators in the country, only two can claim credit for the fact they can maintain diesel engines at the same low cost of a gasoline engine. The majority of operators, especially those in our size category, are unable to do so. Operators of 1200 to 3000 diesel vehicles, such as there are in the Eastern areas, have been able to set up efficient maintenance methods, not to be approached by small companies. They can devote one man's time to one function. He can be made into a specialist and the small operator can't do that, so low cost maintenance disappears on diesels with the small operators.

We went to the use of propane a year ago. We purchased the first two buses made available by Twin Coach Co. They have been operating about a year and you might be interested in the statistics that I developed in connection with that one year.

The engines have gone 70,000 miles to date, which is not much so far as the life of an engine is concerned, as we know it these days. However, using gasoline as a fuel, that engine would have worn to the point where, if we were to get 700 or 900 miles to a gallon of add-oil

consumption, we would consider that engine normal as to wear. As of now, the two propane engines, at 70,000 miles, are running in excess of 2500 miles to the gallon of add-oil. If there is any basis for the statement that the engine will give 50% more life on propane, it seems to be evident in the early figures, although I will make no attempt to say positively at this point that such is the case. I am going to be a little cautious on that point. I might say our buses run in city service which is normally expected to result in more rapid engine wear than over-the-road bus service.

Much Farther on Propane

Our gasoline engines average 125,000 miles between teardowns and we think we can get 175,000 miles or 200,000 miles using propane as a fuel, which is quite an extension so far as mileage is concerned. We are experiencing about a 7% loss in fuel economy with propane as compared to gasoline. A year ago with the first two coaches we put in operation, we didn't tell the operators what they were, so they were operating them the same as they did a gasoline bus. We discovered there was no appreciable loss in fuel economy as long as we kept the thing under wraps.

When we told them what it was and they discovered for themselves there was a tremendous surge of power available to them, propane over gasoline. We feel that a good part of this 7% loss is at least attributable to the thrill that the operator gets in moving ahead of traffic with an engine that gives him a starting advantage. It sounds fantastic, but it is true.

TABLE 1

	1st Cyl.	2nd Cyl.	3rd Cyl.	4th Cyl.	5th Cyl.	6th Cyl.
Vertical	.0025″	.0015″	.0015″	.00125″	.0015″	.0015″
Horizontal	0	.00025″	.0005″	.0005″	.00025″	.0005″

Our men like the propane buses. In fact, if they can in some way work out a trade due to mechanical failure, they will even engineer mechanical failures on the gasoline bus in order to get a propane bus. That has been our experience.

There are some other figures in which you might be interested: With a gasoline engine, we get 10,000 miles distributor point life, and on propane we are getting 20,000. On spark plugs, we used to get a maximum of 8000 miles, which I might add is not good, but under propane we are now getting better than 20,000 miles. We used to rebuild carburetors on gasoline buses to keep them at a high peak of efficiency at 15,000 miles, and we now rebuild regulators on propane buses at 25,000 miles.

I might say also that the cost of rebuilding a regulator is approximately the same as that of a carburetor. We get 10,000 more miles for the same cost. On oil changes, 7000 miles is a maximum point with a fil-

ter change on a gasoline bus; on a propane bus, oil and filter changes are made at 10,000. The oil comes out perfectly clear; in fact, it is as clear as it was when it was poured in. There is no contaminant. The only thing we are fearful of is the acid condition. Many of you are acquainted with that. While we change the oil from a color and consistency standpoint, there appears to be no reason to change.

We feel that the capital cost of making the conversion and putting in our 36,000 gal. of bulk storage —all capital costs—will be written off in eight months' time.

I think that you can realize from statements that have been made that we have given verification to the cost savings that are possible.

We have never considered the use of diesels in Wichita. We felt it was not the desirable thing to foist badly smelling diesel engines on the residents of Wichita . . . and as a result we acquired a large fleet of postwar gasoline buses capable of using high octane fuel. So it was a natural setup for us to convert to propane. Now that we have made the conversion, I think I can tell you this in all sincerity that from a management viewpoint, if the decision to use propane or diesel had to be reconsidered today starting from zero vehicles, that we would make the decision in favor of propane without hesitancy.

As for disadvantages, truthfully, I am still looking for them. I can't find them. Seemingly, in such a fine, economical operation as has been made available to us through the use of propane, it would seem that there would be some inherent disadvantages. At this point we haven't found

them. It seems too good to be true.

What the long range picture holds, I don't know. We in the transit field are quite concerned about it, maybe needlessly so. As you will recall, 10 or 15 years ago, when the diesel picture was then the most talked of item, low cost fuel was a factor. Low cost fuel, as in the case of propane, is likewise a factor. Will the sands of time run out on propane as they did with diesel?

We had occasion recently to take down one of the propane engines that we put into operation over a year ago. At the time it was dismantled, the vehicle had traveled better than 75,000 miles. The cylinder wall wear of this engine is tabulated in Table 1.

The wear, as shown in tabulation above, extends just one-fourth inch down from the top of the sleeve. There is very slight wear one inch down and from there to the bottom of the sleeve there is no measurable wear. The head and pistons were totally free of carbon deposit; the valves showed no signs of pitting, and there was no measurable wear in the valve guides or valve stems. The engine pan looked like the day it was installed in the coach — completely free of varnish and sludge, and the sump screen looked like it had just been installed—it was so clean. Oil changes have varied experimentally from 10,000 to 20,000 miles, and the oil consumption for the first 20 days of May was 2750 miles per gallon of add-oil.

If this engine is a criterion—and I believe it is—of what we can expect from propane, engine life of 200,000 miles or better will not be uncommon. The statement of 50% longer engine life will be substantiated; in fact, it might approach 100%.

Conversion Demonstrations

at the Blaugas Co., Omaha, Neb., and Cygas Co., Neligh, Neb., and Sergeant Bluff, Iowa, plants.

What the Farmer Wants to Know About Power Conversions

Cost? Savings? Performance?

By Ernest Fannin
President, Fannin's Gas & Equipment Co., Phoenix, Ariz.

WE must look to the farm as offering possibly the widest potential for an increased summer load via the increased utilization of LP-Gas in internal-combustion engines, viz.: tractors, stationary engines, combines, feed choppers, mechanical cotton pickers, balers, generating plants, and other equipment for which the application of LP-Gas may be practical.

ERNEST FANNIN

The trend toward conversion of farm tractors from gasoline to LP-Gas is gratifying because it is in this field, more than in any other type of farm equipment, that we may reasonably expect to develop the largest increase in LP-Gas distribution.

It is conservatively estimated that there are approximately 4 000,000 farm tractors in use in the United States: Depending upon acreage farmed, cultivating season, and horsepower of the tractors, we know that the average fuel used per year varies from less than 1000 gals. to more than 4000 gals.

Generally speaking, this usage is confined to the spring, summer, and fall months when the business is particularly acceptable to LP-Gas operators and refineries. By applying simple multiplication, we arrive at a sizeable figure measured in terms of gallons of product, whether it be gasoline, diesel fuel, or LP-Gas.

As yet we have barely scratched the surface. And that's all right too, because it gives us just that much bigger target to shoot at. It means that there still is plenty of business to be had, and that a major portion of it should develop during the months when we need it to balance our summer-winter operation.

There are 3 basic questions which come to the farmer's mind when he considers converting his tractor to LP-Gas: 1. "What is the initial cost?" 2. "How much shall I save in operating expense?" 3. "Shall I have equal or more power?" He will also

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Material for part of this paper was provided by O. L. Garretson, president, General Tank & Steel Corp., Roswell, N. M. Abstracted by BUTANE-PROPANE *News* from paper delivered at the April 30-May 3 LP-Gas session of the API.

be wondering and asking about other things such as safety, convenience of handling, the effect of LP-Gas on his engine, what bearing the conversion may have on the future resale or trade-in value of his equipment, and many of a similar nature. He is concerned about all these things because it is a "new deal" to him, and he doesn't know too much about it. But primarily he will be evaluating a capital investment against savings in operating costs; and, if the job isn't done as well or better than he has been accustomed to with gasoline, he doesn't want it at any price. If he is a good farmer, he is a good businessman—and he knows how to figure the angles.

There are several types of carburetion equipment being offered by suppliers throughout the country. Every one of these systems is designed to function satisfactorily within the scope of its limitations.

Quite naturally there is some difference of opinion regarding the most satisfactory type of vaporizing equipment, but these systems are all alike in one respect; i.e., they supply a controlled amount of LP-Gas vapor to the carburetor of the engine. The main difference is the manner in which the liquid LP-Gas is converted to vapor.

Some equipment accomplishes vaporization by natural atmospheric heat absorbed by the cylinder or tank, which enables vapor LP-Gas to be withdrawn direct from the fuel con-

R. G. Thompson, Climax Control Div., demonstrating the installation of LP-Gas carburetors on a tractor using the vapor system.

tainer to the regulating equipment. Another type of equipment used is the heat exchanger, which is inserted into or attached to the fuel tank. Water from the engine-cooling system is circulated through this heat exchanger so as to furnish heat for vaporization. In this system, vapor LP-Gas is also withdrawn direct from the fuel container to the regulating equipment.

Liquid Withdrawal Described

Still another type of equipment accomplishes vaporization by withdrawing liquid LP-Gas from the fuel container to a heat exchanger which is installed at a remote location from the fuel container. At this point the liquid passes through the first-stage regulator into the heat exchanger, which converts the liquid into vapor. Heat for the heat exchanger is supplied by water from the engine-cooling system which is circulated through the heat exchanger or by exhaust gases from the engine as used in some particular types of carburetion equipment. The vapor then passes on into additional regulating equipment.

In each type of equipment discussed, LP-vapor is introduced to the engine from the last stage of regulation by tapping into the venturi of the gasoline carburetor; also by using an adaptor in conjunction with the gasoline carburetor, or by installing a special LP-Gas carburetor — either straight LP-Gas or LP-Gas and gasoline combination.

Cost Factor

There is a wide variance in the initial cost of converting tractors, as well as other internal-combustion farm equipment, to the use of LP-Gas. The range is from less than fifty to as much as several hundred dollars, depending upon type of carburetion selected and the labor involved in its installation.

Whatever the cost—whether it be the lesser or the higher figure, or some amount in between—there is apt to be sales resistance because the customer has been used to paying only a few dollars for a gasoline carburetor. Furthermore, a suitable storage tank must be provided, and this represents a substantial investment when a comparison is made with the tank used for gasoline storage. A convenient, economical method of refueling tanks used on mobile-type installations, with a minimum of delay and effort, is an important factor.

There is a certain amount of apprehension as to whether this change in fuels will result in damage or premature failure of some engine part. Actually the reverse is true if the new fuel is properly applied to the engine; nevertheless, the customer must be sold on this point.

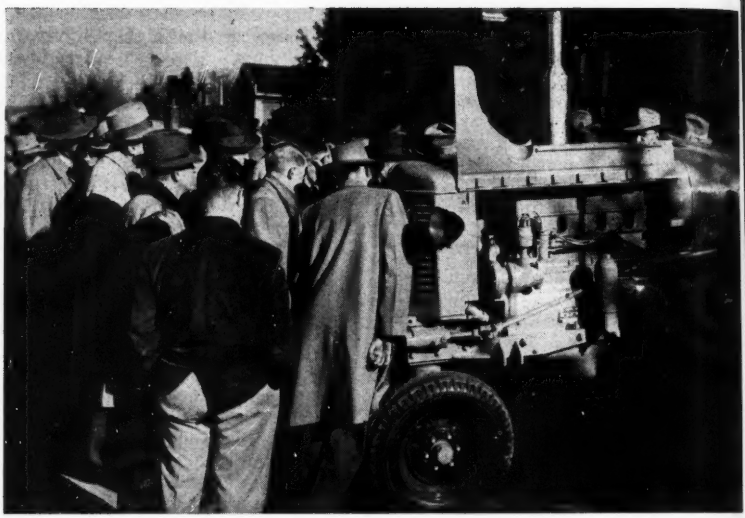
It is not uncommon for a customer to raise the question of safety. This is understandable because there is always a tendency to fear something which cannot be seen, such as fuel which is contained in a pressure vessel. It is, however, a comparatively minor factor, and almost always the customer can be sold on the excellent safety record of LP-Gas in internal-combustion engines powered with this fuel.

Resale Problem Solved

Another question, and one which is being rapidly solved by the wide-scale use of LP-Gas, is the resale or trade-in value of equipment which has been converted.

There may be some doubt in the customer's mind as to whether he will be able to obtain expert technical service in the event of a breakdown or failure of equipment during a critical period when the availability of the unit is extremely important.

In the past gasoline-carburetion servicemen, when called upon to cor-



Students at the LP-Gas Engine Fuel Service School crowd close to learn how to use engine testing equipment. The tractor was one of seven used for demonstration.

Photo, courtesy of the Bastian-Blessing Co.

rect some condition which may have developed in a piece of equipment powered with LP-Gas, have been inclined to throw up their hands and put the blame for failures and almost every form of operational difficulty directly on the vaporizing system, whether these had any direct connection with the trouble or not.

They have done this because they have been trained only in gasoline carburetion, and simply take the easy way out—much to the discouragement of the farmer who has a plowing or cultivating job on his hands, and who must keep his equipment rolling.

In our own operation, and in the application of LP-Gas carburetion, we have practically eliminated the hit-and-miss diagnosis of the gasoline-carburetion serviceman who may be called upon to make repairs or adjustments on an LP-Gas-powered rig. Simply, when we convert a tractor, we install a small auxiliary gasoline storage tank of our own manufacture, with a capacity of 2 gal. or 3 gal. (according to tractor size), and a shutoff valve in the fuel line. If there is a failure in the system, or if a lack of power develops, it is a simple matter to cut in the gasoline for checking purposes.

Our theory is—and the farmer can readily see our thinking—that, if the tractor then performs satisfactorily with gasoline, only an adjustment is necessary to accomplish the same result with the LP-Gas-carburetion system. Certainly this method provides

an easy double check; and, if performance fails to develop with either fuel, the mechanic must then look for the trouble and correct it—usually without serious difficulty or delay.

Cash Outlay Minimized

Providing this auxiliary gasoline fuel tank is accomplished with a comparatively small cash outlay, it pays dividends in customer satisfaction not only for checking, or testing purposes, but also because the operator always has an emergency supply of fuel which may be used to propel the tractor from the field to his bulk filling plant in the event of overtime operation and resultant depletion of fuel in the mobile LP-Gas tank.

What, then, do we have to offer that farmer when we approach him with the idea of converting to LP-Gas carburetion?:

1. More dollars in the bank through savings in the cost of fuel!

2. A clean, dry, easily applied, flexible energy which propels his tractor efficiently, and which maintains an even, maximum power longer between overhauls because of negligible carbon formation and consequent excess wearing of the affected parts.

3. Elimination of sludge in the crankcase, which in itself has a direct bearing upon engine life.

4. Many additional hours of operation between oil replacements because of the absence of sludge and other foreign matter incident to gasoline carburetion.

5. Farm engines have a long service life, averaging 10 to 20 years for tractors. When a conversion is made to LP-Gas, either on a new tractor or one in reasonably good operating condition, it is reasonable to expect that no replacement will be necessary during the normal life of the tractor. Therefore, it is a one-time, long-time investment.

6. To make this investment attractive to the farmer, and in order to prove to him conclusively that it may be retired through savings in operating costs within a reasonable period of time—based upon tractor usage and annual fuel consumption—certainly we must show him a price differential of not less than 4 cents per gallon, and preferably 5 cents or more, in the delivered cost of LP-Gas compared with gasoline.

Fortunately, this differential exists in almost every section of the country—with an average of approximately 5 cents. In some sections there is an even more favorable differential: 5 cents per gallon works out nicely; 4 cents will get some of the business. If the differential is less, the opportunity to install conversions becomes more remote.

Incentive System Used

Various methods have been worked out by LP-Gas operators as an aid or incentive to farmers to go ahead and convert their tractors, with particular reference to those who may not be inclined to make a cash investment.

Of course, there is always the conventional finance plan, with a nominal down payment and monthly terms on the balance.

For the uninitiated or skeptical, some operators have made installations of the less permanent—or perhaps we should say more easily applied and removed—systems of carburetion on a purely trial basis of 30 to 60 days. The number who retained the systems and have paid for them at the expiration of, and even prior to, the end of the trial period is remarkable.

Then there is the so-called "equipment account," which has been used extensively in our own and other operations throughout the country. Under this plan we install the con-

version at no immediate charge to the customer. He does, however, agree to use our fuel in his farm operation, and pays for this fuel at a price equivalent to charges currently in effect for non-highway gasoline, which now averages approximately 5 cents per gallon in excess of our price for tractor fuel.

Customer Acquires Equipment

He continues on this basis until the 5-cent differential (credited to his equipment account) offsets the original cost of the carburetion equipment, at which time he is given a bill of sale to it. The price then drops to the current delivered cost of LP-Gas tractor fuel, viz., approximately 5 cents per gallon less than he had been paying while he was acquiring full ownership of his carburetion equipment.

Under this system, and while he is building up a credit for his equipment, he operates on precisely the same fuel-cost basis to which he has been accustomed with gasoline, and he is thereby relieved of the financial pain of an initial investment. It has helped us to make many multiple installations which might not otherwise have been possible in view of the investment involved, and it has increased our LP-Gas load accordingly.

Chicago "Bluebird" Lines Changing Over to LP-Gas

Bluebird Coach Lines, Inc., Chicago, has sought authority from the Illinois commerce commission to buy 14 new propane buses and to convert 15 of the present fleet of 78 buses to propane use. Total cost of the project was estimated at $270,000.

Six of the new buses will be 51 passenger models and eight will accommodate 45. Delivery from Twin Coach Company, Kent, Ohio, is expected by Aug. 1.

Using Propane Called "Practical Patriotism"

By Ed Hauck

THE present national emergency, which threatens a general tightening of allocations of conventional liquid fuels for pleasure and industry, may be the springboard for wider employment of propane, especially in Eastern United States.

This is the opinion of Harley L. Swift, president of the Harrisburg (Pa.) Railways Co., whose bus system currently is experimenting with propane in six carriers.

Mr. Swift believes many transportation companies will be switching over to propane because of its economical advantages over other fuels and because of the vast untapped sources of propane. Also, use of propane will free gasoline and oil for the fuel-hungry military establishments. He adroitly labels this "practical patriotism."

However, Mr. Swift says the propane industry must lick one major problem before Eastern states go in for wholesale employment of the relatively new fuel.

"The problem of delivery is the major obstacle of wider use of propane in the East," he said. "In addition, the storage problem is almost equally great.

Will Aid Defense Plans

"Once this is solved there definitely will be more to it in the East and the demand will be greater," the transportation expert claims. "And in the interest of national defense, propane will be that much more in demand."

Since early in December Mr. Swift's company has been sending six of its buses over regular runs with propane in their tanks.

"You could say we are at the start of an experiment and we intend to continue for some time yet," Mr. Swift said. "However, we are very pleased as far as we have gone. Our men driving the propane buses say they have more power, respond more quickly and can get through the heavy traffic better.

"It burns cleaner and has what you might call more 'oomph.'

"The propane we use gives approximately the same mileage a gallon as ordinary gas," Mr. Swift says. "But the lower cost of propane at the present time would mean greater economy."

Particularly impressing him is the lack of exhaust fumes. Only heat is emitted from the exhaust pipe which is odorless.

Five of the propane-using buses on the Harrisburg lines were bought from Fageol Motor Co., of Canton, Ohio, manufacturers of Twin Coaches.

Compression Ratio is 10:1

They were revamped at Canton to increase the motor's compression ratio from a normal 7 to 1 to 10 to 1. This was done by installing higher compression pistons.

These buses were equipped with the heavy steel fuel tanks to withstand propane's pressure.

The sixth bus is an American Car and Foundry-Brill with a Hall-Scott motor. The pistons in this carrier were replaced with high compression pistons and a carburetor, built by the Ensign Carburetor Co., was installed.

To keep a steady supply of the fuel handy during the experiment, Mr. Swift purchased propane storage units from the Phillips Petroleum Co. They were placed in the regular company storage space.

The buses are undergoing an exacting trial on the Harrisburg lines. Their daily route means hundreds of miles per week are added to their motors. Routes range as high as 40 miles and the going is rough during the morning and evening rush hours in Harrisburg, one of the more congested cities in Pennsylvania because of its layout.

The city lies along the Susquehanna river with the downtown section hemmed in on four sides. To the west lies the river, the south railroad yards, east the residential area and in the north a residential area blocked by mountains.

Thousands of workers in the Pennsylvania capital city commute. This, naturally enough, chokes the traffic arteries in the morning and evening when piled on normal traffic flow.

Harrisburg buses must buck this auto maze, thus coming under a sure-fire test.

The propane buses have performed so admirably to date that Mr. Swift has this to say:

"All in all, I believe there is more than an outside chance that propane will be used for future propulsion of motor vehicles.

"At any rate," he adds, "we will purchase vehicles in the future with an eye to the likelihood that we will use it."

Two States Provide Laws For Motor Fuel Use

The states of Florida and Georgia have enacted legislation affecting LP-Gas as a motor fuel.

In Florida, sellers of butane or propane for motor fuel use will now have to obtain a license from the state comptroller, file bond, collect the fuel tax, and make reports.

South Carolina dealers will be licensed by the tax commission, collect the fuel tax and make reports.

C. C. Turner Rejoins "Homgas" As Field Representative

C. C. Turner, author of "The Bottled Gas Manual" and "Practical Management of an L.P-Gas Business" series, running currently in BUTANE-PROPANE *News*, has now rejoined the Home Gas Corp., of Housatonic, Mass., after an absence of a number of years. During this interval, Mr. Turner founded and managed Maine Gas & Appliances, Inc., Portland, Maine.

Having disposed of his interests in "Maingas," Mr. Turner will now work with "Homgas" dealers in their sales, financial, and engineering needs, problems with which he is intimately familiar. At present his activities will be centered in Maine where Homgas is building a new bulk plant.

For several years Mr. Turner was also associated with Utilities Distributors, Inc., Portland, Maine.

Ohio River Tow Boats Install Gas Refrigerators

Several sturdy tow boats that ply long stretches of the Ohio River have incorporated bottled gas refrigeration equipment to keep perishable food fresh for the crews.

Bedford-Nugent Sand and Gravel Co., which operates its own fleet of tow boats to push barges with strategic building materials between Tell City, Ind., and Paducah, Ky., out of its home port of Evansville, realized it had to find a better way to preserve vital food supplies for the crew on these trips.

Previously, the company had relied on mechanical refrigerators, operating these units by draining extra voltage off the generators installed on each craft. But this method was far from satisfactory.

Whenever the boats docked and

the power system was shut off, the refrigeration process stopped, too. In many of the river towns, no auxiliary power supply was available to keep the refrigerators operating when the boats were in dock. If, for any reason, the craft was temporarily laid up, this would also cause a break in the refrigeration operation.

When Bedford-Nugent began an equipment modernization program, its engineers put special emphasis on the problem of finding a surer method of providing safe and proper food refrigeration for the crews. The company turned for the solution to Servel, Inc., also of Evansville.

As a result, nine Servel refrigerators, operating on bottled gas, are now installed in five Bedford-Nugent boats. Two of the boats are equipped with two Servels each. These are a sand dredge and the company's newest tow boat, the J. W. Bedford. Another sand dredge and a second diesel-powered tow boat each have one Servel. A third dredge has three refrigerators aboard.

Because the gas refrigerators are not dependent upon the generators as a source of power, the crews are now assured that their perishable food supplies will have proper storage conditions, at all times.

NGAA Revises Specifications And Test Methods for LPG

A new publication containing all the generally accepted specifications and test methods for LP-Gases has just been released by the Natural Gasoline Assn. of America, Tulsa. Adopted as recommended procedures at the June meeting of the NGAA

Board, the revisions in previous NGAA methods are the result of more than two years of study and research by the Technical committee under the leadership of Chairman H. A. Montgomery, Warren Petroleum Corp., Houston.

Known as NGAA Publication 2140, the new 32-page edition contains two new methods, "LPG Corrosion Test" and "LPG Sampling Method," and includes a former separate publication "LPG Specific Gravity Test (Hydrometer Method)." All tests have been considerably revised to give them greater accuracy and duplicability and to make them more useable. Some of the more noticeable changes are in the apparatus used in the vapor pressure, propane residue and weathering tests. For vapor pressure testing an adaptation of the Reid bomb proved to be the most practical after experiments with several other types.

Principal changes in the LPG specifications are: vapor pressure specified as 215 lbs., at 100 F, instead of the old 225 lbs. at 105 F, and replacing of the old "Sulphur Content" specification with "Total Sulphur" and "Corrosive Compounds" specifications. Other revisions are largely editorial.

The new publication is available at NGAA offices, 422 Kennedy Bldg., Tulsa 3, Okla., at $1 per copy.

LP-Gas Commission Set Up For Industry in Alabama

Legislation in Alabama has provided for an LP-Gas Commission to be made up of members of the Public Service Commission. With the passage of this bill, House Bill No. 228, it is felt that administration efforts to put the LP-Gas industry under the Public

Service Commission have been defeated. The bill has been passed by the house and is now before the senate.

The new bill contains provisions for the licensing of dealers with an annual fee of one-quarter of 1% of the annual gross receipts from the sale of LP-Gas, with a minimum fee of $250 and a maximum fee of $500. It also requires bonding and insurance, and a minimum storage of 15,000 gals. for each 1000 customers with a "bonafide" supply contract.

Previous to the passage of the amended bill, Alabama dealers had set up a committee, headed by Selwyn Turner of the National Butane Co., Mobile, to raise a fund for keeping the industry separated from utility operations.

Rulane Gas Co. Prepares For Winter Heater Sales

Approximately 75 dealers and salesmen of the Rulane Gas Co., Charlotte, N. C., attended a two-day heating school at Hotel Charlotte recently.

The school was conducted to better prepare the Rulane dealers and their representatives to serve the needs of the public during this year's heating season. It was timed to spearhead an intensive heating equipment campaign which was scheduled to start on July 1.

On the program were George McFadden, president of Ohio Foundry & Manufacturing Co., Fred Farmer, sales manager of the Holly Manufacturing Co., G. J. Kunkle, district representative of the Tappan Stove Co., and William Mitchell, of Bryant Heater Co.

J. Z. Watkins, merchandising manager for the Rulane Gas Co., presided at the various meetings. The president of the company is W. S. Lander, new president of the LPGA.

The Trade

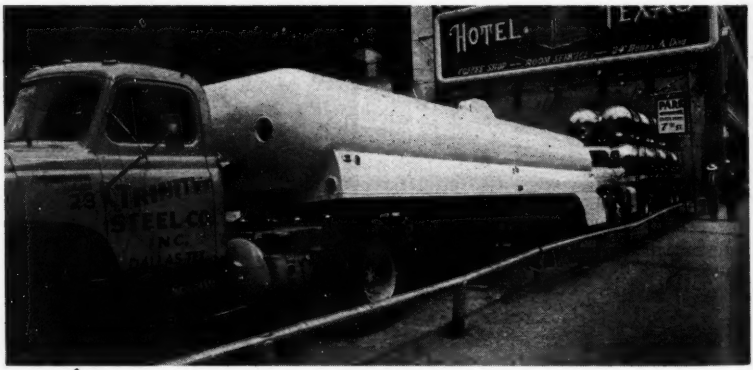
Two key men of **Temco, Inc.**, Nashville, Tenn., were killed in an airline crash near Denver late in June. They were Frank C. Drake, sales manager of the firm since 1948, and P. W. Cullom, chief engineer for the past three years. Mr. Drake served as general accountant and in the sales department before he became sales manager.

Mr. Cullom was a member of the AGA approval requirements committee for both gas-fired room heaters and gas-fired clothes dryers.

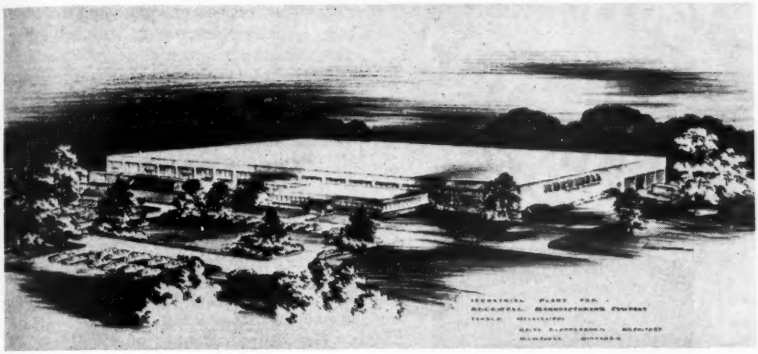
Odin Stove Manufacturing Co., Erie, Pa., has opened a new factory branch warehouse in Chicago which will use the facilities of Rollan Sales Corp. The Rollan organization will act as direct factory representatives for Odin. J. Emmet Diver is Rollan's sales manager.

A novel idea was put into effect by **Trinity Steel Co.** of Dallas, Texas, at the sixth annual convention of the Texas Butane Dealers Assn. at Fort Worth, June 13-16.

Meetings and exhibits were in two hotels three blocks apart. Adjoining one of the hotels, on the way to the other, is a parking lot. In this parking lot, Trinity Steel parked an LP-Gas transport and a trailer loaded



An LP-Gas transport and a trailer loaded with tanks, all products of Trinity Steel Co., occupied a key position next to headquarters hotel at Texas Butane Dealers Assn. convention in Fort Worth recently.



Pictured is an artist's sketch of Rockwell Manufacturing Co.'s new Tupelo, Miss., plant scheduled for completion in September. The one-story building covers 150,000 sq. ft. and will house production facilities for company products including meters, valves, regulators, etc.

with storage tanks, all of which are manufactured products of the company.

This display, as shown in the accompanying photograph, was in addition to Trinity Steel's regular exhibit space in the hotel.

Reznor Manufacturing Co. has announced that Charles W. Guptil is now district manager for the Minnesota, North and South Dakota territory. The appointment became effective July 1, the retirement date of Henry Balsley, who has been district manager in the territory for the past 12 years.

The West Coast research and development laboratory of the **Robertshaw-Fulton Controls Co.** has recently moved into its new 12,000-sq. ft. building near the Los Angeles International Airport.

According to H. W. Geyer, director of the new laboratory, it is specially equipped for basic research as well as the development of all types of controls and devices. The building has individual sections for research, development, drafting and testing, a centrally located library-conference room, a model shop, and a modern test kitchen.

"LP-Gas Circulator" is the name of a publication of **Lukens Steel Co.**, Coatesville, Pa., published in the interests of the LP-Gas industry. The four-page paper features topics of interest to dealers such as LP-Gas as an automotive fuel, farm market potentials, collecting from delinquent customers, customer relations, etc.

P. E. Foote, president of **Petrolane, Ltd.**, Long Beach, Calif., announces that his firm acquired on July 1 the petroleum products distribution business of Gene Morrison in Yuba City, Calif. Mr. Morrison will remain in an executive and advisory capacity.

The Yuba City plant, well-known in the industry, will continue to offer

complete petroleum service, marketing, liquefied petroleum gas, gasoline, fuel oils, lube oils and allied products.

Petrolane's operations in the Yuba City area will be conducted under the name Morrison's Petroleum Service.

This acquisition becomes the 12th in the Petrolane chain in California.

D. S. Smith was elected president and chairman of the board of **Perfection Stove Co.** following the retirement of L. S. Chadwick. Mr. Smith has served Perfection in various capacities since 1910.

The appointment of William M. Day as chief engineer of Perfection has been announced by Marc Resek, vice president and director of engineering.

The company has discontinued manufacture of the Acorn-Oriole line of gas ranges, according to L. Bushfield, general sales manager, because of materials shortages and due to the diversion of certain available materials to current defense production.

A company dinner recently celebrated the more than 20 years' business activities of the **American Liquid Gas Corp.**, Los Angeles, manufacturer of Algas carburetion conversion equipment and specialists in LP-Gas plant installations.

HAROLD SMITH

Tribute was paid to employes who have been with the company for a period of 10 years by Harold Smith, president, who pointed out that since the company had entered business in 1932, the LP-Gas industry had risen "from nothing to a position of importance in the

field of industrial manufacturing and automotive transportation."

More than 25 key personnel attended the dinner. Special service pins were presented to the 10-year veterans with company. Employes with three or more years of service were also awarded with service pins.

Si G. Darling, Pratt, Kan., national sales agent for the **Garretson** LP-Gas carburetion system, announced recently the addition of four new distributors of the Garretson line. They are: Parlett Gas Co., Waldorf, Md.; The Universal Corp., Columbia, S.C.; W-F Distributing Co., Denver; and Gas Distributors, Inc., Columbus, Ga.

This brings the Garretson distributing organization to a total of 10 companies. Others are Darlingas Co., Pratt, Kan.; Valley Industries, Mt. Pleasant, Iowa; Tama Distributors, Inc., Memphis, Tenn.; General Tank & Steel Corp., Roswell, N. M.; Town & Country Gas Co., Sioux Falls, S. D.; and Suburban Gas Service, Upland, Calif.

T. W. Saunders, board chairman, **Dearborn Stove Co.**, Dallas and Chicago, has announced several personnel changes. They include:

C. N. HINDS

R. H. Norris, chief administrative officer and executive vice president, was elected to the board.

Leigh Van Brunt was named a new vice president and general manager.

Sales department changes include C. N. Hinds, general sales manager, who was named director of sales

and became a member of the Dearborn executive committee.

C. D. Havens, formerly Southern division contract manager, was named sales manager, Northern division.

Joe L. Wilkinson, formerly a regional sales manager, is the new Southern division production manager, and Karl Peterson is production manager for the Northern division.

Anthony N. Staten was named Southern division comptroller, having recently served as credit manager.

H. E. King has become comptroller for the Northern division.

William A. Marshall has been promoted from assistant chief engineer to chief engineer.

Other new appointments are John A. Cook, personnel director, and J. Gordon Peterson, personnel contact man.

JOHN C. DIEHL

John C. Diehl has been named chairman of the board of the **American Meter Co.** He has been associated with the company since 1919 and has served as chief engineer, a director, vice president and, for the last year, has been president of the firm.

Vernon Beals, president, **Beals Advertising Co.**, Oklahoma City, has appointed H. H. Whitworth, Oxford, Miss., to represent the promotion firm in the Arkansas, Mississippi, and Tennessee area. Mr. Whitworth, who operated the Whitworth Butane Co. in Oxford for 10 years, replaces E. W. Sweeney who is now associated with Delta Tank Manufacturing Co.

W. J. Montgomery has been ap-

pointed sales manager of Beals. He is well known throughout the LP-Gas industry and has appeared on a number of industry-convention programs in several states and called on hundreds of individual gas dealers during his six years with Beals.

American Tank & Supply, 423 S. Industrial Blvd., Dallas, has been formed by DerWayne Scoggins and Aubrey Burns for the purpose of supplying carburetion equipment; motor fuel, domestic, truck, and storage tanks; pumps, fittings, hose, assemblies, regulators, etc., to the LP-Gas industry.

The new company will represent Master Tank & Welding Co. and J & S Carburetor Co. in parts of Texas, Arkansas, and Louisiana.

Super Chef Manufacturing Co. has moved into new offices located at the company plant four miles south of Houston on Hodges St. Mail address is R-3, Box 196-E, Houston.

The "Sinclair Plan" of the **Sinclair Oil Corp.**, proposed to make a portion of the Sinclair Research Laboratories available to independent inventors for researching, developing and proving out of ideas for better petroleum products, or for better application of these products according to P. C. Spencer, president of the company.

A portion of the extensive laboratory facilities at Harvey, Ill. (the laboratories are a subsidiary corporation of Sinclair Oil), will be devoted to the above plan.

As part of a planned expansion program at **Caloric Stove Corp.'s** Topton, Pa., plant, ground was recently broken for a modern administration building. According to Julius Klein, company president, the building will be one story with a half-basement, covering

10,000 sq. ft. of floor space. Provision will be made for general and private offices and an auditorium, dining room, and experimental kitchen.

The company has moved its general offices from Philadelphia to a temporary building in Topton pending completion of the new building, scheduled for occupancy early this fall.

Recent changes in the sales organization of **Rheem Manufacturing Co.** have been announced by C. V. Coons, vice president. C. T. Miller has been made assistant general sales manager.

Succeeding Mr. Miller as appliance division sales manager in New York is Ralph W. Cooke.

Carl H. Horne has been named sales manager of Rheem's refrigerator division. The plan to develop and market a gas-operated refrigerator has progressed to the point where a sales division is being established to plan distribution of the refrigerators.

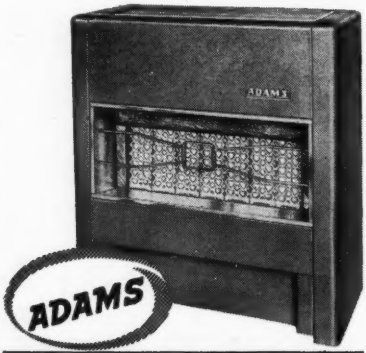
William S. Goodfellow, formerly assistant western regional sales manager, will move from California to Chicago, succeeding Mr. Cooke, as central regional sales manager.

Carl Blom, formerly chief engineer of the pump division, has been elected a vice president of the **Byron Jackson Co.**, Los Angeles, according to E. S. Dulin, president of the company.

Robert C. McLaughlin has been appointed chief testing engineer, **Geo. D. Roper Corp.**, Rockford, Ill., according to Everett H. Shands, director of engineering and development.

Mr. McLaughlin has been associated with Roper since 1937 and has served in various capacities in the inspection and test departments.

George E. Payne has been appointed sales representative, Des Moines, Iowa, territory, for **Cribben & Sexton**



Co., Chicago, according to H. E. Jalass, vice president in charge of sales.

At the same time, Mr. Jalass announced the appointment of C. T. Dukes to head the LP-Gas sales promotion for the Midwest division.

Company expansions totaling $1,200,000 have been outlined by K. W. Lineberry, president of **Black, Sivalls & Bryson, Inc.**, Kansas City, Mo. The major portion of the sum will be expended in Oklahoma City for the addition of a 57,000-ft. plant which will bring about a 25% increase in productive workers.

In addition to the building, plans call for new high and low bays, overhead cranes, bending roll, modernized welding procedures, a new production development and metallurgical laboratory, and the relocation, redesign, and rebuilding of the stress-relieving oven.

Announced at the same time was the removal of the oil and gas equipment division of BS&B, including engineering and sales staffs, to Oklahoma City where the company's oil field equipment is fabricated and distributed. At present, oil field stock tanks, all LP-Gas bulk storage tanks, and LP-Gas truck tanks are built in the Oklahoma City plant.

John B. Krizer, Bartlesville, Okla., has been appointed assistant sales manager of the refining division of **Cities Service Oil Co.**, (Del.), replacing L. C. Trapp who has retired after 29 years with the company. Lee Haugen is manager of the division.

Bastian-Morley Co., Inc., La Porte, Ind., has appointed Harry J. Rose as general manager. He will have full charge of both water heater and gas-fired boiler operations, as well as defense production activities. Mr. Rose will retain his position as treasurer.